UK'S BIGGEST BUYER'S GUIDE 1063 CAMERAS, LENSES & GEAR

What Digital Camera

FREE INSIDE! Black & White Landscapes
20 pages of technique and inspiration

September 2007 Issue 126 £3.99

What to buy... and how to use it

All Mod Cons!

- ✔ Anti-Shake
- ✔ Dust Reduction
- ✔ Live View LCD

The **Olympus E-510** has it all, but does it live up to its specs?

MASTERING YOUR DSLR
Understanding Shutter Speeds
For your best ever action shots

CAMERA SKILLS
Guide To Essential Filters
The two you really need – and how to use them

KILLING CAMERA SHAKE
Sensor versus Optical Stabilisation: Which one is best?

£200 COMPACTS TESTED
6 £195 of the latest models go head to head

AFFORDABLE ZOOMS
6 70-300mm lenses for less than £200
£169

PLUS: Nikon D200 User Feedback • Lightroom 1.1 and loads more

What Digital Camera

September 2007 - Issue 126 - Contents

INSIDE YOUR FREE! MAGAZINE

Learn how to capture Black & White Landscapes
- Seeing in black and white
- Composition tips
- Photoshop fixes
- Top ten tips
- Accessories

What to buy...

07 Gear News
Details of the latest gear

13 Insider's Guide
Equipment advice, recommendations and your questions answered

41 Tried and Tested
Reviews of all the latest products, from DSLRs and compacts to software

42 Olympus E-510
ON THE COVER: The latest 10MP DSLR with a live view LCD and anti-shake

49 Affordable Zooms
ON THE COVER: Six zoom lenses for under £200 on test

55 £200 Compacts
ON THE COVER: Cameras for £200 or under

60 Monopods
Six of the finest put through their paces

62 Fuji A800
Super CCD HR equipped compact

62 Nikon L12
Entry-level 8MP model with VR

63 Adobe Lightroom 1.1
Latest update with a host of improvements

64 Canon Ixus 950
Canon's latest 8MP Ixus model on test

64 Vivitar 6200w
Waterproof compact for £120

65 National Geographic Bag
Breaking the current camera bag trend

65 Pantone Huey Pro
Colour calibration tool

127 Buyer's Guide
ON THE COVER: More than 1,000 cameras, lenses and accessories listed

and how to use it

24 My Digital Camera
This month's best readers' images

30 Killing Camera Shake
ON THE COVER: Sensor versus Optical Stabilisation – which is best?

71 Learning Zone
Our new guide at getting the most from your gear

73 Shutter Speeds
ON THE COVER: Everything you need to know about shutter speed

78 Using Filters
ON THE COVER: Know your UV from your ND? We explain all

86 Gradient Filter
Essential for balancing skies and land

88 Warming Filter
Give your images a little glow

91 Localised Contrast
Martin Evening explains

92 Technique Q&A
Your technical problems solved

94 Evening Class
Martin Evening passes his verdict

98 Take That!
Your travel images from our challenge set in a previous issue

100 Photoshop Challenge
One image, no rules... and win a copy of Lightroom!

P55 Compacts cameras for £200
We test six mid-range compacts

p49 Affordable zooms
Six zoom lenses for under £200

The UK's BIGGEST Buyer's Guide p127

30 pages of digital SLRs, compacts, lenses tripods, printers and lots, lots more

FREE TAMRAC ADVENTURE 6 CAMERA BAG!

Plus, save 5% on the full price when you subscribe to What Digital Camera. See page 68 in this issue for more details

Our Top Websites

Our favourite online citadels of photography...

Nigel Atherton
www.flickr.com
Editor
You can get lost for hours on here, looking at great pictures. Its easy to use too, which is why my Flickr page (www.flickr.com/photos/nigelath) is much more up to date than my website

Paul Nuttall
www.moo.com
Staff Writer
The home of the Moo card, moo.com offers three fantastic printing options for your images

Matt Golowczynski
www.pbase.com
Sub Editor
Before Flickr was Pbase,which to this day is a fantastic resource for image samples from various cameras and lenses

Contributors

The best experts write exclusively for WDC

Philip Andrews
Software Tutorials
One of the world's foremost authorities on Photoshop Elements, and our digital darkroom expert.

Martin Evening
Photo critique
Adobe Alpha tester Martin is a world leading Photoshop expert and author of the No.1 best-selling Photoshop manual.

Ian Burley
Tests & Technology
A computer technology writer since 1994 Ian owns dpnow.com and shares his PC and printing expertise.

Jamie Harrison
Tests & Technique
Professional photographer and printer for 16 years, Jamie has been writing on photography since 2000.

The Team

EDITOR Nigel Atherton
TECHNICAL EDITOR Chris Gatcum
ART EDITOR Steve Crabb
PRODUCTION EDITOR Jacky Porter
STAFF WRITER Philip Harpley
STAFF WRITER Paul Nuttall

DESIGNER Robert Milton
SUB EDITOR Matt Golowczynski
CONTRIBUTOR Philip Andrews
CONTRIBUTOR Ian Burley
CONTRIBUTOR Martin Evening
CONTRIBUTOR Jamie Harrison

Publishing Director Alex Robb
Associate Publisher Lindsay Greatbatch
Senior Marketing Manager Mary De Cinque
Marketing Executive Elliot Smith 020 3148 4321
Group Creative Director Brett Lewis
Product Photography Alan McFaden
School of Photographic Imaging Administrator Laura Bianco 020 3148 4326

ADVERTISING TEAM
Head of Sales Chris Templeman 020 3148 2053
Advertising Manager Dave Stone 020 3148 2516
Display Sales Executives Julia Spencer, Mark Read
Display Ad Production David Smithers 020 3148 2674
Copy Chaser Kumu Vithlani
Classified Sales Executives Merlyn Perez-Silva, Laura Amon 020 3148 2576
Midlands Office
Robert Selvey, 51 Lingfield Drive, Great Wyrley, Walsall, West Midlands, WS6 6LS.
Tel: 01922 412720
Inserts Innovator 020 7261 7710
Repro by Camden Town Typesetters Ltd 020 8523 6700
Printed by Southernprint Ltd
Covers printed by Southernprint Ltd
Distributed by Marketforce, Blue Fin Building, 110 Southwark Street, London SE1 0SU 020 3148 3333

What Digital Camera™ is a Focus Network title, published by IPC Inspire, part of IPC Media Ltd, Blue Fin Building, 110 Southwark Street, London SE1 0SU
Submissions are welcomed, but should be in digital format to the address above or by email to: wdc@ipcmedia.com
IPCMedia reserves the right to use any submissions sent to What Digital Camera in any format or medium, including electronic.
SUBSCRIPTIONS One year rates (12 issues): UK £40.80; Europe £47.50; North America £53.00; Central & South America, Middle East, Far East, Australia, Africa & Asia £58.00 (all airmail). Check the subs page on our website *www.whatdigitalcamera.com* for our latest offers. Enquiries: email ipcsubs@qss-uk.com or telephone +44 (0)1444 475675
BACK ISSUES Each £4.50 from: Back Issues Department, PO Box 772, Peterborough PE2 6WJ. The 24-hour telephone number is 01733 385170 and the website address is http://www.mags-uk.com/ipc

IPC INSPIRE recycle

What Digital Camera™ is a trademark of IPC Media Ltd
© 2007 IPC Media Ltd ISSN No. 1366-5324

Welcome...

..to the September issue. Canon and Nikon have dominated the DSLR market since the beginning, but lately the little guys have been giving them some tough competition. This month Olympus really impressed us (again) with its excellent new E-510. Check out the full review on page 42.

There are lots of other unmissable tests too, including group tests of budget 70-300mm zooms, and the latest £200 compacts. We also explain everything you need to know about avoiding camera shake with Image Stabilisation, including how the various systems work and, of course, which one works best.

If you're more interested in the technique side of photography we show you how to use the two most useful filters for landscapes (polarisers and ND grads), how to get the best from your shutter speeds, create filter effects in Photoshop Elements and, in our free supplement, create fantastic black and white landscapes you'll want to hang on the wall. Phew, I'm exhausted now.

See you next month.

Nigel Atherton
nigel_atherton@ipcmedia.com

Gear News

For *today's* hot photography news visit **www.whatdigitalcamera.com**

Pentax Releases K100D Super

K100D gets a boost with Dust Removal technology

Pentax has announced the release of the K100D Super, based on the popular K100D and bringing new features – including some from the higher level K10D.

The new model features a dust removal (DR) system to keep the sensor free of foreign matter. This works via a special coating of a fluorine compound on the low pass filter, so that minimal dust adheres to the sensor in the first place. A second attack is incorporated in the Shake Reduction (SR) system. When the camera is switched on, the camera's SR equipped CCD vibrates rapidly for a moment to shake off any dust that may be on the sensor. This dust is collected on an adhesive strip in the bottom of the chamber to prevent it returning to the CCD.

As well as the CCD-based SR system, the new sensor is equipped with an auto sensitivity feature with an upgraded top sensitivity of ISO 3200, which Pentax claims is the highest in its class. This can be selected manually, or in auto mode the user can select the ISO parameters and the camera will then automatically pick the appropriate ISO according to the conditions, while maintaining a shutter speed fast enough to eliminate camera shake.

The combination of this and the SR sensor allows users to continue using older Pentax lenses, without the need for new optically stabilised lenes. Additionally an optional adaptor mount will allow the use of older lenses back to the orignal K mount, while other adaptors are available for screw mount, 645 and 67 lenses.

Pentax has also incorporated a new Supersonic Drive Motor, which when used with SDM equipped lenses offers smoother, faster and quieter autofocus, and the camera will automatically detect when such a lens is attached.

As with the K100D, the new DSLR features an 11-area AF system, 16-segment metering and a 2.5inch LCD monitor.

SDHC memory cards can be used as well as SD cards, allowing more images to be stored. Price is to be confirmed, but the cameras are expected to ship at the end of August.

The company has also announced the addition of two new models to two of its compact ranges. Both models – the **E40** and **M40** – feature an 8MP sensor, as well as a digital shake-reduction mode and Face detection technology, the latter adjusting for both the focusing and exposure of portrait shots.

The E40 adds to the budget E range and will feature the same ease of use as its predecessors – with its Green mode providing automated exposure, sensitivity and white balance – but will incorporate the new technology that will strengthen its position within the budget market.

Meanwhile, the M40 model boasts a slim 18mm body and maximum ISO sensitivity of 3200, which combine with its 8 million pixel sensor and Auto picture mode to provide functionality and style.

Release dates and RRPs are yet to be announced. Visit **www.pentax.co.uk**

SANDISK

Ducati Cards

SanDisk has announced the latest release in conjunction with Italian-based motorcycle company Ducati. The new range of memory cards are SanDisk's fastest ever, with the Extreme Ducati edition CompactFlash cards offering transfer speeds of 45MB per second. Initial distribution is planned for August in North America and Europe, with suggested retail prices starting from $129.99. For more information visit **www.sandisk.com/ducati**

PENTAX - HOYA

Pentax And Hoya To Merge

In other Pentax news, the company has finally announced that its merger with Hoya is to go ahead. Following a year of talks and speculation, which saw Pentax president Fumio Urano tender his resignation, the companies announced that a £437m deal will be soon finalised, but that both companies will continue to use their respective brand names.

FUJIFILM

Fuji Offers 18x Zoom 8MP Bridge Camera

Fujifilm has announced its **S8000fd** bridge camera, the latest addition to the 18x optical zoom club.

With an 8.3MP sensor and CCD-shift Image Stabilisation Technology, the camera looks set to rival the latest equivalents from Panasonic and Olympus, and like previous models in the company's range, a Real Photo Processor features alongside a maximum ISO of 6400. The lens stretches from 27-486mm with other key features including a 15fps burst shooting rate (at a 2MP resolution) and face-detection technology, capable of identifying up to 10 faces per image.

Six further cameras have also been announced within Fujifilm's range. The **F50d** model features a 12MP sensor and CCD-shift image stabilisation, alongside a 2.7in LCD screen and the latest version of its face-detection technology, v.2.0. The **Z10fd** meanwhile, has been targeted at the youth market with its sleek, curvaceous styling and features such as infrared transmission to compatible devices and easy posting of images onto internet blogs. Another 'Z' model has been announced in the form of the **Z100fd**, which boasts a 19.8mm slim shell, 5x optical zoom and a maximum ISO of 1600.

Replacing the S5700 bridge model, the **S5800** features a 10x optical zoom and an Intelligent Flash mode, that latter analysing lighting conditions before adjusting the intensity of the flash.

The **F480** model boasts a wideangle lens, 8.2MP sensor and a 2.7in LCD screen, while the **A920** model builds on the success of its entry-level range by incorporating a 9MP sensor and 4x optical zoom together with 15 scene modes and a dual-media slot, supporting xD, SD and SDHC cards. Expect to see the new models in stores in September.

SHOP TALK

Photo retailers tell us what's hot this month

NAME: Aaron
SHOP: LCE Nottingham

Your hottest products right now?
The Canon Ixus 850IS & Olympus E-510 twin kit are both selling very well.

What's your current favourite camera?
Sony Alpha with 18-200mm lens

What camera gear do you own?
Sony T3

What camera would you give your sister?
The Fuji Z2 would suit her down to the ground

Biggest regret?
Not working harder at school

What would you most like for Xmas?
A winning lottery ticket

Photo predictions for the next year?
I can't even predict next month in the current market

PANASONIC

New Panasonic 18x Superzoom

Panasonic has extended its Lumix range with the announcement of three new models – one of which boasts an 18x optical zoom.

The FZ18 will be the latest model to join the company's bridge camera portfolio, and packs in a 28-504mm equivalent optically stabilised lens ahead of its 8.1-megapixel sensor. The style and functionality of the camera echoes that of previous FZ models – with manual control and ergonomic handling being key – but it also packs in a couple of tweaks to facilitate speed and ease of use, as well as superior image quality.

The Venus III processing engine drives the camera, working to reduce noise at higher ISO settings and improve start-up and focusing times, while a new Intelligent Auto mode features alongside the Intelligent ISO setting seen previously. As well as standard automated settings, the new mode is also capable of analysing more advanced elements such as white balance, to provide a more accurately exposed image. The camera's ISO range stretches up to 6400, while a high-resolution 2.5in LCD screen and electronic viewfinder feature on the rear. Face detection also features, with the ability to simultaneously detect up to 15 faces per image and expose them more accurately.

Two further models have been added to the FX range, in the shape of the FX33 and FX55. Both feature a 28mm-100mm equivalent Leica DC lens with the FX55 further boasting a 3in LCD screen, while Mega OIS completes the cameras' specification.

Details of the new cameras' release, including RRPs, are yet to be confirmed but as soon as we find out, so will you.

DXO

DxO Updates

DxO Labs has expanded its offering in the digital imaging world with a host of new developments.

A new version of its Optics Pro software – version 4.5 – is also now available for both Windows and Mac users. A plug-in for Adobe Lightroom features, as does one for Flickr.com which allows automatic login, tagging and uploading of DxO-processed images to the photo sharing website. The company has also increased its support for the newest Canon and Nikon camera bodies, the EOS 1D Mark III and the D40x respectively. With additional support for certain Tokina lenses, the software helps to correct lens distortion, reduce noise, fringing and exposure among other things. The basic software is now available priced £45.

A further development is the company's collaboration with REALVIZ, whose Stitcher software is to be bundled with the latest version of Optics Pro and sold at a discounted price. Four different packages will be made available to meet the varying demands of both amateur and professional photographers. The bundles are available for purchase from both DxO (www.dxo.com) and REALVIZ (www.realviz.com) respectively. For more information visit **www.dxo.com**

SAMSUNG AND CASIO

New Point & Shoots

Samsung has launched four new compacts, including a high-zoom entry-level model.

The L730 and L830 models, boast 7MP and 8MP sensors, 3x optical zooms and 2.5in LCD displays, and will cost £119 and £149 respectively. The £179 L83T combines many of the design features of the NV series and offers an 8.2MP sensor, 3x zoom, face recognition, ISO 1600 and ASR image stabilisation. Finally, the entry-level S85 boasts a 5x zoom (38-190mm equivalent), ASR image stabilisation and Wise Shot technology. Release dates and RRP are yet to be announced.

Casio has announced two new compacts in its Exilim range, the EX-S880 and the EX-Z77.

Both models feature Casio's EXILIM Engine 2.0 image processing module, as well as a new YouTube BEST SHOT Mode, which 'enables users to shoot and save movies at the optimum size, quality and other settings' for the popular video-sharing site. The EX-Z77 'zoom' and EX-S880 compacts will both come in a range of colours and will be released next month. For more information visit www.casio.co.uk.

NEW CAMERAS AT A GLANCE

CAMERA	MP	LENS	COMMENTS
CASIO EX-Z77	7	3x optical	High-quality movies, blur reduction
CASIO EX-S880	8	3x optical	2.8in widescreen LCD and YouTube BestShot mode feature
FUJIFILM A920	9	4x optical	Entry-level model with above average spec
FUJIFILM F480	8	4x optical	Wideangle zoom with Picture Stabilisation mode
FUJIFILM F50D	12	3x optical	Latest version of face-detection technology and Super CCD
FUJIFILM S5800	8	10x optical	Compact bridge camera with Intelligent Flash and Anti-blur
FUJIFILM S8000FD	8	18x optical	Wideangle lens and Dual-mode Image Stabilisation feature
FUJIFILM Z10FD	7	3x optical	Stylish youth-oriented compact with infrared transmission
FUJIFILM Z100FD	8	5x optical	19.8mm slim compact with CCD-shift image stabilisation
PANASONIC FX33	8	3.6x optical	Slim compact with Intelligent Auto mode and wideangle lens
PANASONIC FX55	8	3.6x optical	As above, but with 3in LCD screen
PANASONIC FZ18	8	18x optical	Superzoom with Venus III engine that can detect up to 15 faces
SAMSUNG S85	8	5x optical	Entry-level model with 15 scene modes and Auto Macro mode
SAMSUNG L730	7	3x optical	AF and AE Face Recognition and ISO 1600 capabilities
SAMSUNG L830	8	3x optical	As above but with an extra megapixel
SAMSUNG L83T	8	3x optical	SVGA movie mode and Wise shot function in a slim body

SIGMA

Lens Robbery

Sigma's UK's Hertfordshire base has been the victim of a robbery for the second time this year, the manufacturer has confirmed. The roberry, believed to be carried out by a professional gang, saw thousands of pounds worth of stock taken. Anyone with any information should contact Sigma on 01707 329999.

RICOH

Ricoh RR750

Ricoh has announced the launch of the **Caplio RR750** compact. Targeted at entry-level users, the slim 7MP model offers a host of features, with several new additions to the specification of its popular predecessor, the Caplio RR730. A standard 2.5in LCD screen features, as does a 3x optical zoom and six scene modes. Expect to see the Caplio RR750 in stores towards the end of July with a price of £99.99. For more information visit **www.ricoh-cameras.co.uk**

CANON - SONY

Canon and Sony invest in CMOS

Canon and Sony are set to expand their sensor manufacture with both companies investing millions in their production facilities. Canon has stated it is investing $451 million in a new factory in Japan, which will double the production of its image sensors. The development will facilitate the incorporation of more CMOS sensors in to its compact range, with an estimated 3 million more set to be produced. Sony meanwhile, is to expand its own CMOS production by pumping almost $500 million into the principal manufacturing facility, the Kumamoto Technology Centre, which follows follows a similar move three years ago, when the Japanese company invested a similar amount in the manufacturing plant.

MARKS & SPENCER

M&S to sell digi-compacts

Marks and Spencer has entered the digital camera retail market with a new range of stand-alone technology departments in 14 of its main stores throughout the UK which will place its emphasis firmly on customer service. For more information and to see the range visit **www.marksandspencer.com**

NIKON

No End To Nikon's Generosity

Nikon has kicked off summer with a range of customer care enhancements in the shape of free software, extended warranties and cashback offers.

The first is a two-year warranty offer on all camera bodies, including both Nikon's Coolpix compact and DSLR ranges. The warranty is due to commence from 1st September 2007 and is valid on all purchases made on or after 1st July. Customers simply have to register their product online, by visiting **www.nikon.co.uk/register**. The second announcement is a new summer cashback promotion. Customers buying the Nikon Coolpix S500 between 13th and 30th July 2007 can claim £50 (UK) or 75 (Eire) by completing and sending a promotional voucher due to appear in national press, along with a receipt and sheet B of the Coolpix S500 warranty slip to: Nikon Coolpix S500 Cashback Promotion, PO BOX 504, Leicester, LE94 0AE. Finally, the company is extending its Capture NX offer to 3rd August 2007. Customers purchasing the D200 DSLR are eligible to claim a free copy of the software, worth £119.99. For more information visit: **www.nikon.co.uk/sites/**

OLYMPUS

Olympus Upgrades Studio Software

Olympus has announced the release of its Studio 2.0 software for professional and serious amateur photographers.

A major update of the image management and editing software, the new version is available for Mac and Windows and enhances RAW image control, facilitates image backup and allows the printing of CD's and DVD's, thereby assisting workflow. The program retains its editing, batch processing and light-box functionality, along with the possibility of full control of the camera from the computer.

A trial version of the software will be bundled with the new Olympus E-System cameras and a full version is available for download via the internet. For more information visit **www.olympus.co.uk**

POLL POSITION

This month's most popular digicams

pixmania.co.uk
1. Canon Ixus 850 IS
2. Fujifilm Finepix S5700
3. Pentax Optio E30

pcworld.co.uk
1. Fujifilm Finepix A700
2. Samsung L700
3. Sony CyberShot W55

amazon.co.uk
1. Canon Ixus 70
2. Sony CyberShot W55
3. Casio EX-Z75

What Digital Camera

Next Month

THE BIG TEST

£600 DSLR Shoot-Out

The **Nikon D80** takes on the **Pentax K10D** and **Canon EOS 30D** in our three-way head to head

GROUP TEST

Printing Labs

Where's the best place to get your prints done? 16 labs compared

PLUS!

HDR Photography

It's the next Big Thing in digital photography, but what is it, and how do you do it? Don't miss our complete guide to HDR

Master your ISO control

Understanding the ISO mode, and how to get the best out of it

FREE!

20-PAGE GUIDE TO

Autumn Landscapes

Insider's Guide

THIS MONTH
Hot or Not? p14
Reader reviews of the Nikon D200
Test Drive p17
The Pentax K100D gets a test drive
Help! p19
Where, what & how should I buy?

9 pages of your reviews, buying advice and questions

Join us in our mission to reward excellent service

When buying camera gear, price isn't the only thing you should consider. The quality of the service is just as important. That's why we started the Good Service Awards. By rating the service you receive whenever you buy anything you'll be able spread the word to fellow readers.

Each year we give awards to the retailers with the highest scores in three categories: online,chain store and independent. Last year Camera World scooped our online retailer award; Digital Depot scooped the Independent category; and London Camera Exchange was the best multiple.

We'll be naming 2007's best retailers at the end of the year. Meantime, whenever you buy any item of gear please take just a couple of minutes to visit our website, dick on the Good Service Awards link and rate the service you received. Thanks.

THIS MONTH'S TOP RATED RETAILERS:

ONLINE
1. www.picstop.co.uk (9.60)
2. www.warehouseexpress.co.uk (9.20)

INDEPENDENT
1. Camera World - 0207 636 5005 (9.20)
2. Digital Depot - 01438 367619 (9.10)

MULTIPLE
1. Currys (8.40)
2. Jessops (8.10)

Vote now at **whatdigitalcamera.com**

WORD ON THE STREET

Best deals this month...

Pentax K10D £499.99

JESSOPS.com

Jessops Summer Sale includes a great price on the Pentax K10D. Brimming with features including 10.2 megapixels, a Shake Reduction system and the new Pentax Real IMage Engine (PRIME), the versatile K10D captures true-to-life images in a wide range of shooting conditions. It earned a WDC Gold Award and a 90% score in our Big Test, so Jessops price of £499.99, complete with 18-55mm lens, makes it a good deal.

WWW.JESSOPS.COM

Kodak V1003 £129.98

Currys

Currys is selling the Kodak V1003 at half price. The V1003 features a 10MP sensor, a 3x zoom lens and ISO up to 1600. It comes in three colours – black, silver or pink. The offer is available exclusively to Currys and currys.digital.

WWW.CURRYS.CO.UK

Tripods £FREE P+P

picstop.co.uk

Picstop supplies a range of tripods in a range of sizes, from table-top to full-size tripods with pan and tilt heads. Many also come equipped with a free carry case (offer expires September 31st). What's more, readers of What Digital Camera can receive theirs with free postage and packing. Please use offer code: WHATTRIPOD at the checkout online or quote over the phone.

WWW.PICSTOP.CO.UK/TRIPODS

THIS MONTH'S TOP DEAL

Olympus E-300 £149

digital DEPOT

A digital SLR for under £150? Yes, really! Digital Depot is running a special Olympus DSLR promotion, featuring six E-series models, a mix of ex-demo/ex-display and new cameras. Prices start at just £149.00 for the E-300 with 14-45 Zuiko lens, while the limited edition silver E-500 is just £279 with a 17.5-45mm lens, 1GB SanDisk card plus four accessories, all for £279.00. Ex-demo/display models come complete as a new camera with 12 months warranty, new models have 2 years warranty.

WWW.DIGITALDEPOT.CO.UK

READER REVIEWS

Real readers, real reviews, this is your voice

HOT OR NOT

Nikon D200

What do WDC readers make of Nikon's semi-pro DSLR?

Nikon users had to wait patiently for the D100's successor back in February 2006.

When the D200 finally arrived, most agreed that Nikon had surpassed itself with an exciting feature-set, overall operational speed and excellent handling. Other key improvements include a larger LCD screen, tougher construction and an improved resolution, and it scored highly when we came to review it. But now that it's had a chance to settle down in the DSLR world, what do you, the reader, make of it?

WHAT WE THOUGHT

The Nikon D200 achieved a fantastic 90% when tested back in February last year, and here are a few snippets from our review...

- *'The D200 is very capable and offers bags of potential... and it's good value too'*
- *'I was able to rattle off 144 frames in a minute'*
- *'Start-up speed is impressive'*
- *'There's not much to dislike about this camera'*
- *'The general high-quality build is continued with the various ports'*

Mike Murdoch

From: Swansea

The D200 is the DSLR that finally made me give up film, which to me was a big deal! Image quality is excellent – at least on a low ISO – and both ease of use and speed are wonderful, with the Qual, ISO, and WB buttons being particularly useful. It's not perfect – I have never been satisfied with the auto white balance, for instance, although setting it manually isn't a problem. Its Auto flash uses annoying pre-flashes and is less accurate than the TTL flash that previous Nikon film cameras used, but if I could improve one thing it would be the noise levels at higher ISO settings. Overall, I'd give it 7 out of 10.

WHAT'S HOT

- Image quality at low ISO
- Ease of use

WHAT'S NOT

- Noise at higher ISO settings
- Crop factor

Lee Cullivan

From: Stockport

The best points are its spot metering, autofocus points and control layout, all of which are easy to adjust. What I don't like is the fact that there is no sleep facility; I've run the battery dry a few times from this fact alone. If I were to change one thing it would be the ease with which the back control wheel is depressed. Also, my nose changes the focus point often as this control is so easy to push. I also own the Canon EOS 5D and 20D models but the D200 is my favourite camera and overall I'd give it 8 out of 10 – it would score higher if ISO quality at 800 upwards were just a little better.

WHAT'S HOT
- Spot metering
- Autofocus points

WHAT'S NOT
- No sleep facility
- Noise above ISO 800

Aditya Mopur

From: Hyderabad, India

The weather sealing, excellent button placement and the very responsive camera system make it a fantastic DSLR. There have been a few quality control concerns though, like the wheel which has a tendency to stick now and again and the battery life, which Nikon could have improved.

WHAT'S HOT
- Weather sealing
- Response

WHAT'S NOT
- Sticky wheel
- Battery life

Kristina Gill

From: Kent

The D200 is my first DSLR, which I have had for two months after upgrading from a Canon SD100. The menus are logical and intuitive, as are the other controls. Taking pictures on Auto is just as easy as taking on Manual mode, with the ergonomic build being solid and very comfortable to handle. On the downside, the battery doesn't last long at all and adding a grip just adds more weight. I would easily recommend this camera to a beginner as I don't think it's too much to handle, especially if you're willing to put in the time to get the most out of it. I would give it 9 out of 10.

WHAT'S HOT
- Intuitive menus
- Ergonomic build

WHAT'S NOT
- Battery life

MORE VIEWS

We scoured the land for your D200 soundbites

Rob Sanderson
It's a beautiful camera to use, with great performance and a solid build, and it wipes the floor with every camera I have previously owned.

Dave Deluria
I wanted a DSLR that could take the abuse from the elements and, after being rewarded with a trouble-free experience, I appreciated the speed by which one can control this camera.

Robert Coder
The build quality, autofocus, and metering are all top-notch, and the ergonomics are amazing.

Paula Ross
I love the controls and how responsive it is. I wish that noise at higher ISO settings was better but it's not a big issue.

Michael Oberman
It could have had a full-frame sensor and it is pricey, but overall I love it.

NEXT MONTH

Olympus E-410

If you own one, email us at *wdc@ipcmedia.com* and tell us what you think of it

NIKON D200: OVERALL AVERAGE SCORE 8/10

READER REVIEWS

Real readers, real reviews, this is your voice

£280

READER REVIEW

Panasonic FX-100

Jane Watkins
From: London

I was looking for a camera that was easy to use and was small enough to be slipped into my pocket or handbag – and boy does the Panasonic FX100 fill that brief and more! I'm not a technophobe but I didn't want to have to wade through an enormous manual to make the most of the camera's features. My partner uncharitably descried the 'I' mode as 'I for idiot', but after using the camera for just a short time, I found this hard to dispute; point-and-shoot has never been simpler and more elegant! Even using the second smallest picture size provided large images that were full of detail, and, as always, don't let what you see on the large LCD screen fool you – there were a couple of photos that I wasn't sure about, but when looking at them on the computer, even the deepest shadows showed excellent crisp detail. It's also small and slim and changing any of the settings requires only a few clicks, meaning you don't miss anything. Your biggest problem would be keeping it in your own pocket – it had a strange tendency to migrate to my other half…

READER DSLR REVIEW

Canon EOS 350D

Emma Duff
From: Northumberland

With the picture quality improved over the 300D model and a satisfactory fill-in flash offering flexible lighting control, I've been very happy with the 350D's versatility. It's a lightweight and quick little machine and, what's more, has a good battery life. At first I struggled with the accuracy for fast-moving subjects, but once I got used to the AF settings I got great results with ease. I did buy an extra lens but rarely use it as the kit lens suffices for around 70% of the photos I take. Although delighted with mine, you would probably need larger lenses and a Speedlite flashgun to bring it up to a professional standard. All in all, the EOS 350D is very easy to use and perfect for beginners to DSLR photography.

£380

GROUP TEST p55
Canon fan? See what we thought of the IXUS 75 and Powershot A570IS models in our group test

£150

READER REVIEW

Samsung SBG DIV grip

Steffan Mayric Hughes
From: Sussex

The first noticeable thing about the D1V is the excellent build quality and its high price; an RRP of £149.95 seems an awful lot of money for a screw-on battery chamber, particularly when it doesn't come with a battery, which is another £49.95 (RRP). The question is, do you really need the grip when a spare battery in your pocket has nearly the same functionality? How high is your need to have a really mean-looking camera? The only real advantage is being able to use the camera in a portrait-shooting position, as it has a shutter release and exposure dials placed for that purpose – that and the nifty compartment that holds the remote control. But if you are vain enough to want a camera that can frighten small children away, you'll love it.

TEST DRIVE

Pentax K100D

On a recent holiday, Dan Rosen tested out the Pentax K100D... and here's his verdict

Dan Rosen
From: Oxford

What led you to choose this particular camera?
I recently went on holiday with a few friends, and one of them brought along his DSLR. I was impressed by the fantastic images he could produce and, despite being a somewhat novice photographer, I wondered what I could do with such a camera. If I were to buy a DSLR, this would be in my price range so I thought I'd give it a go!

What were your first impressions?
Like most DSLRs it certainly looks very professional, but the main thing I noticed was the uneven weight distribution. Also, I liked the simplicity of the controls and the fact that they are in the right places, and found it quite intuitive to use.

Did it meet your expectations?
Certainly in terms of the quality of the photograph I was able to take. Also, I was impressed by the response time for taking consecutive shots which allowed me to capture moving animals relatively easily. The battery life was fantastic; I was able to take more than 700 shots over four days without needing to recharge it.

Did you find it easy to use?
I did. The shutter and aperture controls fall easily to hand and the camera responds quickly to any changes. The autofocus setting (SAF) does, however, leave a lot to be desired as it gets exceedingly confused by distant objects or scenes with a range of elements.

How would you rate the following:
Looks It looks sleek and professional.
Handling The weight imbalance of the body leads to slightly skewed photos if care isn't taken during consecutive shots, so I suppose a tripod would be the answer. The controls are quite intuitive and well-placed, though.
Performance I was really impressed with the pictures produced, as I never thought I would able to do anything close to what I managed! Also, the six-megapixel sensor gives great quality images even of small objects at a far distance.
Value for money Very good, mainly because the quality of the images I could get in relation to the cost of the camera is fantastic. It probably wouldn't meet a more experienced photographer's needs, and for the price that's not unexpected, but for me it's great.

Did you experience any problems?
Long exposure shots without a tripod were tricky, even if the camera was resting on a flat surface. The weight distribution means that when taking the shot, the camera is prone to moving slightly.

Would you buy one?
Definitely. It's great value for money and is a vast improvement on the quality of my old camera.

Summary
Easy to use, basic DSLR that a beginner should have no problems getting to grips with.

HELP! Buying Advice

contact wdchelpfile@ipcmedia.com with your questions

Before you buy, read our essential advice and tips to make sure you get a good deal

BUYING Abroad

Differences in exchange rates and retail competitiveness in foreign markets can produce eye-popping bargain prices, but don't expect all shops to offer great deals. In the US, for example, the national camera market is very competitive with well-known areas where specialist camera retailers offer genuine bargains. Mail order suppliers in the US can also offer attractive deals, but smaller local outlets, often targeting holidaymakers, are often much more expensive.

Warranties can be a headache. Some manufacturers offer a worldwide warranty, but there are plenty of documented cases where customers have experienced difficulties in getting warranty service from their local manufacturer representative after purchasing a camera from abroad.

And what about tax duties? The personal travellers' allowance for importing goods on arrival back in the UK from anywhere outside the EU is £145. A penny more than that and you will be charged VAT and any applicable import duty on the whole amount. The good news is that there is no additional duty charged on digital still cameras, but video cameras incur 4.9%-14% in duty and lenses, 6.9%. 35mm SLR cameras are rated at 4.9% duty. Incidentally, these duties are technically chargeable when importing from the EU, though VAT is normally charged at the time of purchase, at the rate applicable in the country of purchase. You should be ready to show evidence of the price paid for your goods.

SHOPPING TIPS

• When receiving imported goods via the post or courier, only goods above £18 will be taxed, but again, a penny more and the whole amount is liable.

• When buying online, beware of assurances you won't have to pay import duty or VAT – you almost certainly will, especially for valuable items.

BUYING Online

If you know what you want, buying online can save you money. If you're unsure, it isn't so good, because you can't handle and compare the goods.

Some of the better online retailers have a telephone helpline so you can get sales advice, and of course a few also have a bricks and mortar operation as their base.

When buying online don't forget to factor in postage costs, and read their returns policy – one drawback of buying online is the hassle of returning faulty goods, or dealing with poor service. In general the well-known names are reliable, but do your research before buying from a name you don't know. Price comparison sites like PriceRunner show user ratings from previous customers.

Buying through auction sites like eBay should be hassle-free, but be wary of prices that seem too good to be true.

BUYING Second-Hand

Great deals can be found buying second-hand. Digital cameras are quite reliable, though circuit boards can fail. The main problem is physical damage. For lenses especially, a knock may not leave an externally visible mark, but the optics may be affected. There are three main sources of used equipment.

- **Specialist photo retailers:** A trustworthy place to buy. Items are carefully checked and you can examine them before buying. You'll get at least three months' warranty, but this is the most expensive way to buy used gear.
- **Classified ads:** The least costly avenue, but you have the least protection if the item is faulty or stolen. Try to ensure you are supplied with the original packaging, manuals and accessories, as well as proof of ownership.
- **Online auctions:** See 'Online', left.

BUYING ON THE High Street

High street stores are finding it tough in this online age, but a well-supported local store can be a tremendous asset, especially if it's staffed by friendly, helpful, knowledgeable people. The convenience of shopping locally and being able to handle and discuss the merits of an item with the salesperson is valuable and even if such retailers can't guarantee the very cheapest prices, surely great service is worth a modest premium?

Another advantage of buying locally is that faulty items can usually be exchanged and any warranty work managed via the shop rather than having to send it away yourself.

Of course, you don't want to fall foul of grossly uncompetitive pricing. Research your prospective purchase in advance and work out the comparative costs (not forgetting shipping) before deciding how much you'd be prepared to pay by buying locally.

READER QUESTIONS

The experts help you make the right choice

DSLR ALL-IN-ONE PACKAGES

What gear do I need with my DSLR?

Philip Grant

From: Birmingham

I've been considering investing in a DSLR for some time now, and I'm quite tempted to buy one of those packages that offer you an extra lens, flash, bag etc, as I do plan on taking my photography more seriously. I feel that I could save myself some money by buying equipment I may well buy in the future now, but I'm not sure exactly what I will and won't need and there seem to be so many packages out there; would I be making a mistake if I just bought the camera now?

Matt replies: *In short, no you wouldn't. Many retailers now offer DSLR packages usually consisting of a bag and an extra lens, and maybe even a flashgun, for a considerable saving on the separate retail price, but the quality of these additional items is often overshadowed by their potential saving when bought together.*

As most DSLR kit lenses tend to fall somewhere between the 18-70mm range, retailers will offer an additional lens which has a focal length of around 70-200mm. This assumption that every photographer wishes to complement his DSLR with a longer lens is slightly odd, as many people will no doubt choose an additional lens largely based on what sort of photography they practice. It overlooks the fact that there must be a good deal of portrait or landscape photographers who will desire a fast prime or ultra-wideangle lens as their secondary investment. A memory card is essential but the differences in price between high-street and internet prices can be vast, and unlike a camera, it is something which most people will buy online in confidence. DSLRs don't generally come with a dedicated bag, but one that's comfortable, good quality and spacious enough to hold any additional accessories should dictate a purchase, so should probably be considered separately rather than just bought on a whim. A flashgun is something many people will eventually buy, but the range of exposure options, guide numbers and metering compatibilities vary so again, careful consideration is due here.

Finally, a protective filter is something that some people will flatly refuse to buy and some won't leave the shop without, and despite my views lying with the former I'd say it's best left to your own discretion, particularly if buying an additional lens with a different filter diameter.

Lens ideas?

Lee Timber

From: Southampton

I am looking to buy a telephoto lens with an aperture of f/2.8 for my Nikon D80. I've found two possibilities – the 70-200mm VR and 80-200mm without VR – but I cannot find any reviews about which gives the better picture quality. Any ideas?

Matt replies: *We have previously tested the 80-200mm lens you mention, where it scored a fantastic 93% – currently the highest of any lens we've tested. The Editor remembers it being a sharp lens that was a pleasure to use and good value considering its £799 RRP. Sigma's 70-200mm f/2.8 lens which again scored highly with 92% may also be one to consider, and can be found slightly cheaper at around £749. But the VR in the 70-200mm lens no doubt helps overall sharpness, and, judging by the reviews it has received and its general popularity, it does currently look like a favourite among Nikon users. It does still cost around £350 more than the 80-200mm but if you're going to invest this kind of money in a lens, it does pay to do so in one with image stabilisation.*

BYTE SIZE! Your quick problems... our quick answers

Remember this...

From: Helen Clover

What current camera has the largest internal memory?

Matt replies: *Sony's recently-released G1 comes equipped with a phenomenal 2GB of internal memory, which is miles ahead of any other compact currently available. Whether it's because of this or not, it is rather chunky for a compact, though. Look out for our forthcoming review.*

Shifty lens?

From: David Reid

What exactly are tilt-and-shift lenses?

Matt replies: *Tilt-and-shift lenses compensate for the effects of converging horizontal and vertical lines in an image. Typically used within architectural photography, they shift themselves in relation to the camera's sensor, adjusting perspective to provide a more 'straight-on' look.*

What DSLR is best for sports?

Brad Cole

From: London

I am looking to buy my first DSLR soon and plan to shoot a lot of action photography as well as landscape and night shots. I am looking at the Nikon D40 and the Pentax K100D, and also plan on getting the Sigma 10-20mm lens; with a fast prime and a good zoom lens being possibilities in the future. Are there any other cameras in this range that I should consider that might perform better at shooting sports?

Matt replies: *With a wide range of AF-S zoom lenses to choose from, the Nikon D40 would definitely be a good option where sports are concerned. Its 2.5fps burst rate is satisfactory while its 100-frame JPEG buffer is perfectly suited to your needs. You may, however, find other Nikkor options such as a fast prime lens a little limiting, if you still want to regain autofocus capabilities. The K100D does at least have a built-in anti-shake function and a slightly higher burst rate at 2.8fps, and its sophisticated AF system elevates it somewhat over models with a similar spec. Canon's EOS 350D does one better with 3fps burst mode and full compatibility with all EF and EF-S lenses so I would probably look at the latter two more closely than the D40, or even the Pentax K10D which is a touch more expensive than the others but again offers a 3fps JPEG burst rate.*

Are cheap cards safe?

Alex Lewer

From: Middlesex

Is it safe to use cheaper, unknown brands of memory cards for photo storage? I use a 2GB SD card in my Nikon D40, tending to transfer images straight from my camera using a data cable.

Matt replies: *Memory cards are actually only made by a handful of companies worldwide, who then allow other companies to market them as their own. So while a particular card may look cheap compared to another, there's a good chance that it's exactly the same with the only difference being in its appearance.*

For most people, the two main considerations when buying memory cards are capacity and speed. The latter seems to bother people less, but I for one can vouch for how frustrating it can be waiting for standard-speed memory cards to transfer files, especially when full as mine always seem to be. Also, on the rare occasion when I've stupidly removed a memory card from a computer without ejecting it first, images have never been lost from my SanDisk Ultra II cards, but on others have resulted in corruption. While it's not a fact set in stone, it's entirely conceivable that high-performance cards like these, many of which also offer better performance in conditions of extreme temperature, will also offer more protection against these sorts of situations.

MATT EXPLAINS

Lost over lenses? Allow Matt to explain all...

Lens cleaners: what's the most effective?

Harry Joliffe

From: Peterborough

What do you think is the best solution for cleaning lenses? There seem to be so many different products currently on the market.

Matt explains: *You're right, there do seem to be countless products available devoted to such a relatively simple task. Things have certainly moved on from the days of those little blower brushes which never were any good. Though I have to admit, I don't have one all-purpose product that fulfils my needs when it comes to cleaning lenses.*

For dust, I tend to turn my lens upside down and use a Giottos rocket blower to blow it away. Because it's contact free it also feels like I'm doing my lens less harm, and since they now come in a variety of sizes they make for an even better space-friendly solution.

The Lenspen is also a favourite of mine, which has a small pad at one end and a larger one on the other, and is very effective at removing marks or stains. It's a good idea to blow dust off first though, as otherwise you may just end up pushing dust under the lens ring.

Things have certainly moved on from the days of blower brushes

I also know people who fold a reusable lens cloth to a point and lightly brush dust away using its fine tip. I admit that a cloth of some sort can be useful as its cleaning properties extend past the lens itself, but I don't feel it can get rid of dust quite as well as a burst of air can.

Those 'all-in-one' packets you can buy containing cotton swabs, cloths, cleaning fluids and sometimes even a little blower brush may instil some sort of feeling of 'complete-care', but also seem to suggest some sort of laborious cleaning ritual. I think the solution is to have a blower of some sort to get rid of loose dust and a Lenspen or good quality cloth to take care of marks and smears.

Letters

Write to us at **wdc@ipcmedia.com**

The More The Merrier

Lawrence Harding
via email

Regarding your Last Word (July) I can see a very good reason for 12-megapixel compacts – in a word, cropping. With the dropping of optical viewfinders, accurate framing is far more difficult and the extra pixels mean you can zoom in on part of the image and still print at a decent size.

Dust Solution

Harry Jardine
From: Isle of Skye

Regarding your feature about dust on sensors. The answer is simple – use a changing bag. Even an ordinary plastic bag would do.

Editor's Reply: *You should have told Sony, Olympus, Pentax and Canon that before they wasted all that money in R&D developing in-camera dust-reduction systems, Harry!*

No Longevity

Paul Fretwell
via email

As a long-time film photographer I decided to go digital – not because I think that digital is better than film but because I have had some terrible processing done recently. However, my main concern with digital, and why I won't sell my medium format gear, is this: I am worried that pictures I take in 2007 with my Nikon D200 will be nothing more than inaccessible data files on a PC/CD in ten years from now. The speed at which software and operating systems are progressing is quite worrying. Even shooting in Raw will not guarantee longevity. With film, the image is always there as long as the negs or trannies are stored properly.

Editor's Reply: *With the billions of digital images around, it's inconceivable that our grandchildren won't be able to open our TIFFs, JPEGs and PSD files in years to come. Proprietary Raw files are probably the least likely to be viewable, but Adobe's DNG format was designed to solve that problem.*

Buyer Beware

Tom van der Hoven
From: Ramsbury

I bought a Panasonic FX30 from Camerabox over the internet. When it arrived, to my surprise, there were two cameras and an invoice for both – paid in full! Even though the order showed one camera, and one payment, I was sent and charged for two. After numerous unsuccessful phone calls and emails the matter still hasn't been satisfactorily resolved.
What I want to know is how can my order and authorisation for payment on the website for one camera can be manually overridden by them? How could they have charged my bank account for two cameras if I only authorised payment for one? This causes me real concern about buying online – readers should beware.

Editor's Reply: *This highlights the issue of trust when buying online. Our Good Service Awards were designed to help guide buyers towards dealers who have been recommended by fellow readers. See page 13 for our highest scoring retailers this month.*

DOUBLE TAKE

'Amazing Appetites'

Taken at Boston Aquarium by Mark Thomas

Got a funny photo? *Then send it to us at wdc@ipcmedia.com*

LETTER OF THE MONTH

ISO Error

Brian Wright
From: Maidenhead

I found your Mastering Exposure feature in July's issue very interesting but your ISO analogy is somewhat incorrect. You say increasing the ISO is in effect boosting the signal to the sensor. In fact, boosting the ISO is increasing the gain of the electronics' system in the processor, so you're actually amplifying the signal *from* the sensor and not *to* it. The sensitivity of the sensor is static and is largely governed by its physical size and pixel count. Increasing the signal to the sensor would be achieved by reducing the shutter speed or opening up the lens aperture.

Editor's Reply: *We stand corrected.*
Thanks for pointing out our misleading error, Brian. Readers may be interested to know that we'll be covering the subject of ISO in-depth in next month's Master Your DSLR feature.

WIN! A GOODY BAG OF BOOKS

The sender of the Letter of the Month wins a selection of photo books worth at least £50. Send your letters to wdc@ipcmedia.com or to What Digital Camera magazine, Blue Fin Building, 110 Southwark Street, London, SE1 0SU.

READER PICTURES

Send us *your* best shots and you could see them here!

My Digital Camera

Steve Sharp

From: Leeds

CAMERA: Canon 1DS MkII
MAIN LENS: 16-35mm

Canon's highest-resolution DSLR, at 16.7MP, is also its most expensive at around £4500, but it's the workhorse of top professionals all over the world.

When Steve Sharp bought a 3MP Casio compact back in 2002 it was his first ever camera, digital or otherwise. Who could have predicted that just five years – and several competition wins – later, he'd be using Canon's top of the range EOS 1DS MkII and producing stunning landscapes like these?

'I won a few photo contests and invested my winnings in gear' says Steve, when asked how he came to own a £4500 camera and a bag full of top-notch lenses in so short a time.

'The camera is absolutely amazing,' he adds. 'The full-frame sensor lets me get the most from my wideangle lenses and produces virtually noise-free images, even at long exposure times.'

Steve's favourite lens is Canon's 16-35mm, but he also carries a 24mm tilt-and-shift, 15mm fisheye, 50mm f/1.4 and 70-200mm lenses – all Canon, and says that Canon's 24-70mm f/2.8 is his next target. A Cokin X Pro filter system and set of ND Grad filters are his main accessories.

But landscapes like these don't take themselves, and Steve's secret is to get to his location before sunrise, set up his camera on a tripod and wait for the right light.

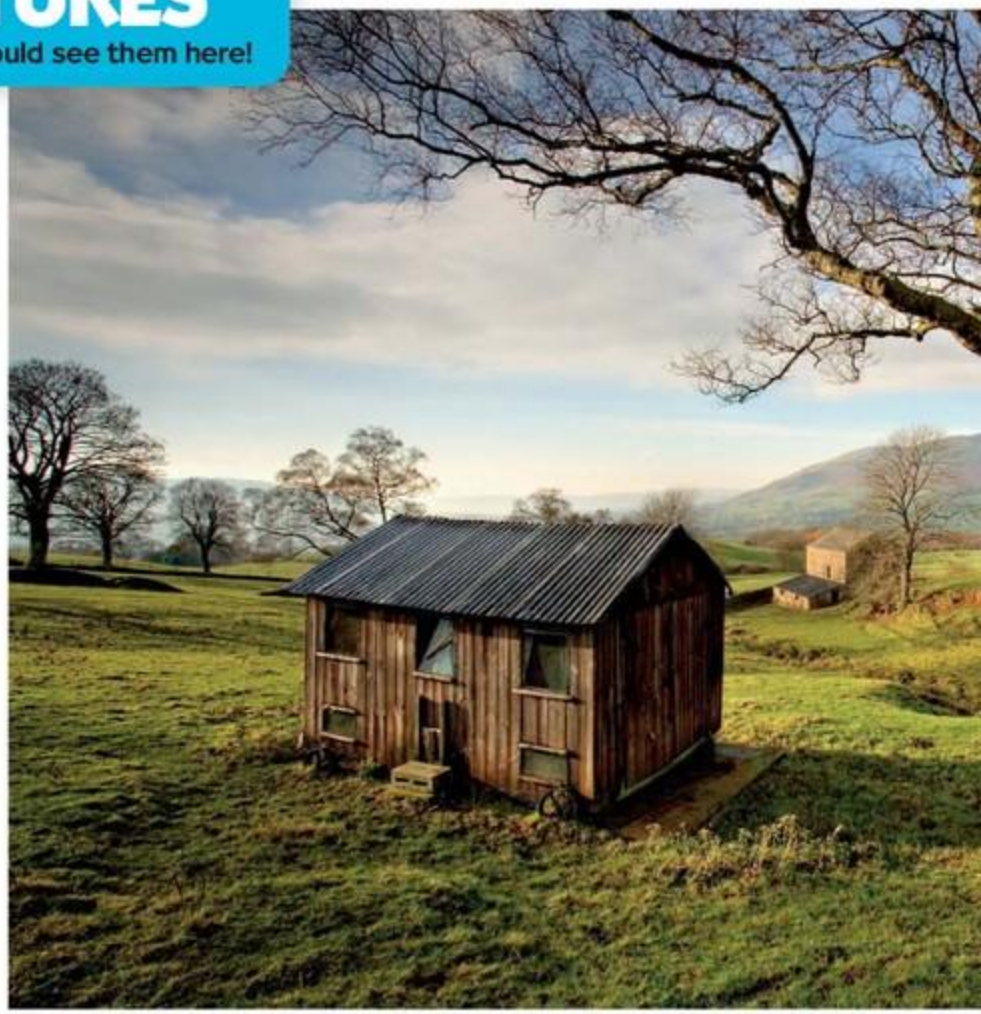
'I often camp out as close to the location as I can so I can be there early.' His favourite locations are along the North Yorkshire coastline, which is easily accessible from his Leeds home.

Steve shoots in Raw, and processes his images using Capture One with final touches made in Photoshop. See more of his work at: *www.sbsharp.co.uk/*

Steve WINS...

A KATA BACKPACK

The Kata R-103 holds a DSLR body with up to a 300mm lens attached, an extra body and four to five lenses. RRP £169.95. For details, visit **www.kata-bags.com**



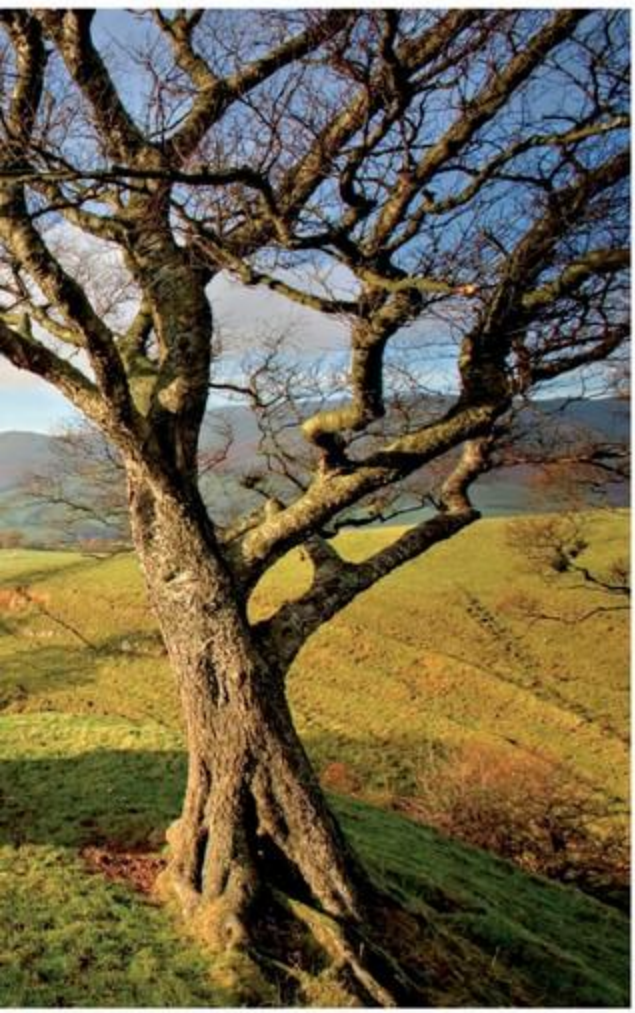
Top: Dowbiggin, Yorkshire Dales
Canon 1DS II, 16-35mm, 1/15 @ f14
The Raw file was converted twice (for shadows & highlights). The files were then tone mapped in Photomatix Pro.

Above: Bridestones, West Yorkshire
Canon 1DS II, 16-35mm + polariser 1/8 secs @ f16
I set up the composition and then waited for the clouds to drift into the right place.

Right: Ovenden Moor, West Yorks
Canon 1DS II, 16-35mm, two ND Grads, 1/10 secs @ f16
I tried a few shutter speeds to capture the ripples, 1/10th sec produced the best result.

Far Right: Farnley Wheat, West Yorks
Canon 1DS II, 24mm t-se, two ND Grads, 0.3 secs @ f18
I got close with the shift lens and composed with a vertical panoramic crop in mind.

Visit www.supporthexperience.com for further information on National Geographic products



www.kata-bags.com

Above: Spurn High, Humberside
Canon 1DS II, 16-35mm, two ND Grads, 0.4 secs @ f16
I used fill flash with an amber gel to illuminate the grasses in the foreground.

Left: Ovenden Moor Squall, West Yorkshire
Canon 1DS II, 16-35mm, two ND Grads, 0.4 secs @ f22
It had been very changeable weather up on the moor, so I sheltered behind the turbine waiting for gaps in the rain showers. I'd dashed back and forth a few times and couldn't believe my luck on this shot when the rainbow appeared right under the turbine.

Far Left: Dunstanburgh, Northumberland
Canon 1DS II, 16-35mm, two ND Grads, 105 secs @ f16
Shot at dawn on the Northumbrian Coast. Light levels were low, allowing for the almost 2 minutes exposure. I composed the foreground basalt boulders to lead the viewer up to the castle ruins. Like most of these shots, the Raw file was converted in Capture One LE and then spotted and sharpened in CS2

www.kata-bags.com

My Digital Camera

Jonathan Chritchley

From: Biarritz, France

CAMERA: Nikon D70
MAIN LENS: 12-24mm

Nikon's first entry-level SLR was aimed at the enthusiast and was a huge success. It has now been replaced by the acclaimed mid-range D80.

Since childhood, the sea has been a recurring theme in Jonathan Chritchley's life. It's a passion he inherited from his father, who filled the family home in Surrey with lobster pots and other nautical ephemera.

He studied photography in Bournemouth, and then joined the watersports industry, marketing a surf equipment company. It was this job that led him to move to the Atlantic coast of southern France nine years ago, where he still lives today.

'I adore the ocean,' says Jonathan, 'but I'm drawn more to the textures of the coast than the colours, which is why I like to work in monochrome. I also like the nostalgic feelings they induce.'

Having used a 35mm Nikon FM camera for years, he looked to Nikon when he came to buy his first DSLR in 2005. 'The FM was bulletproof, a real workhorse, so I bought a D70. It was affordable, good quality and I could use my existing Nikon lenses with it. Most of these pictures were taken with it, but I've since upgraded to a D2Xs.' His favourite lens is his Nikon 12-24mm, but he also uses 28-70mm, 70-200mm and 300mm lenses. Jonathan has now quit the surfing industry to concentrate on building up his fine-art photo business. You can view more of Jonathan's work at *www.oceancapture.com*

Jonathan WINS...

A NATIONAL GEOGRAPHIC BACKPACK

The Earth Explorer Medium Backpack from the National Geographic range is perfect for photographic expeditions – featuring an intricate design to store your camera gear without compromising on space for hiking gear. RRP £119.95. Visit **www.supporthexperience.com** for more information on the National Geographic range.

See what we thought of the National Geographic Bag in our review on page 65.

Below: **Fishing Tackle**
Nikon D2Xs, Nikkor 28-70 F2.8
I took this shot handheld with a Nikkor 28-70 lens. I was drawn to the soft sunlight on this antiquated but wonderful fishing equipment lying on an old table on a veranda.

Bottom: **Early Morning Mist**
Nikon D2Xs, Nikkor 70-200mm F2.8
This image is all about the texture. The toning gives the image warmth and, I think, a sense of drama and mystery.... I used my Nikon D2XS for this shot, and shot handheld with my 70-200mm lens.

Right: **Fisherman's Door**
Nikon D70, 18-70mm F3.5
I originally composed a shot of the whole door of this fisherman's cabin, but later found the real interest was the interaction between the objects fixed to it, and captured it using my 18-70mm lens.

Bottom Right **Jetty, Azur**
Nikon D70, Nikkor 12-24mm F4
Arrive on location before the wind gets up, and you get glassy water and a very peaceful scene. Like all of the images here, this was processed in Photoshop CS2, firstly coverting to b&w using the Channel Mixer then toning with a slight sepia cast.

www.kata-bags.com

YOUR GUIDE TO ANTI-SHAKE

Condition Stable

What Digital Camera COVER FEATURE

Image Stabilisation. Vibration Reduction. Anti-Shake. It goes by lots of names but the aim is the same – to kill camera shake. So how does each system work, and which is best?

What Digital Camera INVESTIGATES

Photography is a constant battle with clarity-sapping motion. Many subjects move all the time, or unexpectedly, as can the camera – just at the wrong moment. You view the thumbnail image and wonder at the apparent brilliance of your composition and the superb subject matter, only to find motion blur has robbed you of any hope of making a decent print.

A sturdy tripod or fast shutter speed may be the solution in some cases, but for those times when you're travelling light or there just isn't enough of that different kind of 'light', your camera needs some help from high technology; that's when image stabilisation could be your saviour. But just what is image stabilisation and how does it work?

There are several types of image stabilisation technologies...

There are actually several types of image stabilisation technologies, built for cameras or lenses, or even combining the two. Image stabilisation is also known by many different names: Optical Image Stabilisation (OIS), Electronic Image Stabilisation (EIS), Vibration Reduction (VR), Anti-Shake, Steady Shot, and so on. In this feature we explore the mysterious world of image stabilisation, or IS, and reveal the advantages and disadvantages of the competing technologies.

Optical Stabilisation

The original system of reducing camera shake uses moving elements within the lens...

There are three main categories of IS relevant to digital still cameras: Optical Image Stabilisation (OIS), Moving sensor Image Stabilisation, and Electronic Image Stabilisation (EIS). OIS compensates for unwanted movement of the camera and lens by shifting, in real-time, part of the lens optics that project the image onto the camera's image sensor. This optical shifting, if successful, actually keeps the position of the image projected onto the sensor stationary, despite the movement of the camera.

Specially designed camera lenses incorporate a single lens element or group that is electronically controlled by a feedback loop linked to gyroscopic motion sensors. If the sensors detect movement in a certain direction, the system will move the OIS optic inside the lens in a direction that will compensate, keeping the projected image as steady as possible. Only a small part of the overall lens optics is manipulated like this and it's not usually visible to the naked eye. However, you may be able to hear the system operating.

OIS is featured in both interchangeable lenses and cameras with fixed lenses. Originally developed for video cameras, OIS is now implemented by an increasing number of manufacturers in selected camera models and lenses, including some relatively inexpensive cameras. Panasonic, for example, is notable in now offering its Mega OIS in its entire Lumix still digital camera line up.

HOW OIS WORKS

Our tests show that OIS can work extremely well, but there are some technical compromises. OIS works by temporarily altering the optical path in the lens. Critics suggest that this introduces varying degrees of optical imperfection as the system operates. Manufacturers certainly conceded that OIS should only be used when it is needed and offer various operational modes to limit the action OIS takes according to the kind of picture being taken.

> OIS works by altering the optical path in the lens

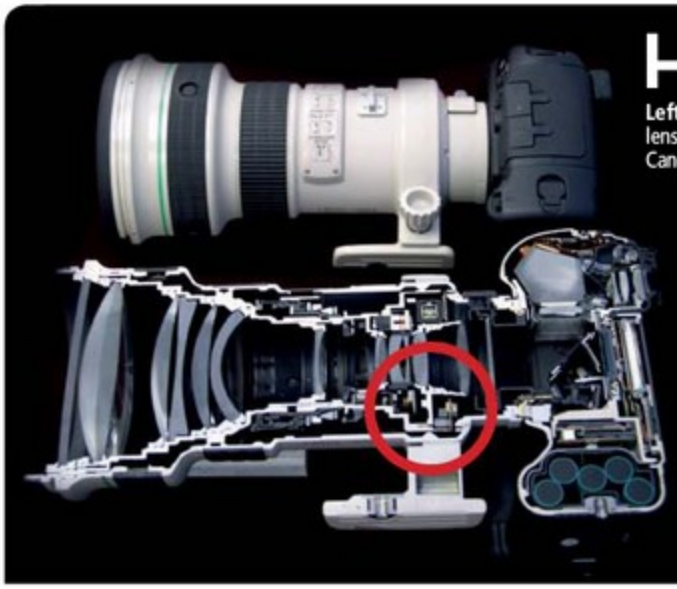
Cameras that provide a live view of the image capture stream from the sensor demonstrate the visual effect of increased steadiness of the picture as OIS works. But our tests tend to confirm advice that it's best to sacrifice the visual comfort if watching OIS in action and to set the OIS mode to work only when the picture is taken. The theory is that constant OIS is more likely to be caught with the OIS-manipulated optic being extremely off-axis when the shutter opens. The further off-axis the correcting lens is, the greater chance there is of optical aberrations being recorded or even the failure of the system as the limit of the correction is reached too soon. On Panasonic cameras, for example, Mode 1 OIS is the constant operation mode and Mode 2 only activates the system as the shutter opens. I'd recommend the latter for normal use.

VERTICAL MOTION

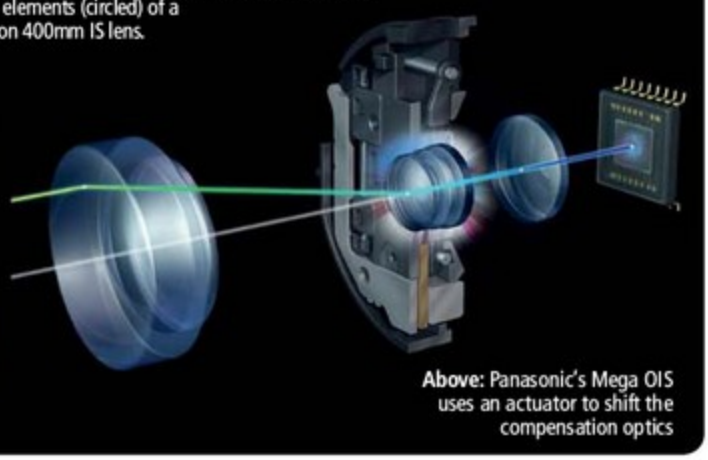
Some OIS systems also offer a mode for use when panning the camera from one side to the other. In this situation, it is only vertical motion that needs to be corrected and so the optics are only manipulated vertically. Sometimes there are additional modes, including hybrid modes that combine optical and electronic image stabilisation. OIS only offers a solution for unwanted camera movement. Blur can also be caused by too slow a shutter speed failing to freeze motion in the subject, even if the camera is stable. This kind of image instability can be dealt with by some EIS systems.

Warnings are also often sounded about using any kind of image stabilisation when a camera is mounted on a tripod or even a monopod, or other steady base. This is because any camera motion in this kind of situation has a different, more damped behaviour, than when the camera is handheld, possibly causing more blur!

HOW OIS WORKS



Left: This cutaway shows the actuator and moving lens elements (circled) of a Canon 400mm IS lens.



Above: Panasonic's Mega OIS uses an actuator to shift the compensation optics

ABOVE: Wildlife photography, with it s use of long telephoto lenses in often far-from-ideal lighting, is just one of the many disciplines where Image Stabilisation can be a life saver.

RIGHT: Optical Image Stabilisation is done within the lens, and the On/Off Switch is on the body of the lens itself. Many Image Stabilised lenses offer a choice of modes: one where the IS is active all the time, and another where it's only activated when you press the shutter release. This picture shows the Vibration Reduction controls on Nikon's 18-200mm VR lens.

OIS in Practice

Nikon 18-200mm VR

This sequence of images, of British Open winner Padraig Harrington, were shot on a Nikon D200 fitted with an 18-200mm VR lens. They were taken at varying shutter speeds with the VR switched on, then again with it off.

STABILISATION ON	STABILISATION OFF
1/15th	1/15th
1/30th	1/30th
1/60th	1/60th
1/125th	1/125th

Which cameras feature OIS?

Here's a list of current compact cameras (below) and DSLR lenses (right) that use Optical Image Stabilisation

COMPACTS WITH OPTICAL (LENS-SHIFT) IS

NIKON COOLPIX
P5000
S500
S50
L12

SAMSUNG
Samsung NV7 OPS

KODAK
Kodak EasyShare Z712 IS

SONY CYBERSHOT
DSC-H9
DSC-H7
DSC-T100
DSC-T20

CANON
PowerShot G7
PowerShot S3 IS
PowerShot S5 IS
PowerShot A570
PowerShot A710
Ixus 950 IS
Ixus 850 IS

PANASONIC LUMIX
(entire Panasonic Lumix range):
DMC-FZ8
DMC-FZ50
DMC-TZ3
DMC-TZ2
DMC-LZ7
DMC-LZ6
DMC-FX100
DMC-FX30
DMC-FX12
DMC-FX10
DMC-LS60
DMC-LS75
DMC-FX50
DMC-FX07
DMC-LX2

LEICA
D-Lux 3
C-Lux 2
V-Lux 1

IS LENSES CURRENTLY AVAILABLE

CANON EF
100-400mm f/4.5-5.6 L IS USM
35mm f/1.4L USM EF 300mm f/2.8 L IS USM
400mm f/2.8L IS USM EF
400mm f/4.0 DO IS USM EF 300mm f/4 L IS USM
500mm f/4L IS USM EF 600mm f/4.0 L IS USM
24-105mm f/4L IS USM
28-135mm f/3.5-5.6 IS USM
28-300mm f/3.5-5.6 L IS USM
70-200mm f/2.8 L IS USM
70-200mm f/4L IS USM
70-300mm f/4-5.6 IS USM
70-300mm f/4.5-5.6 DO IS USM
100-400mm f/4.5-5.6 L IS USM

CANON EF-S
17-55mm f/2.8 IS USM
17-85mm f/4-5.6 IS USM

SIGMA
18-200mm f/3.5-6.3 DC OS
80-400mm f/4.5-5.6 EX DG OS APO

NIKON
55-200mm f/4-5.6 AF-S VR DX Zoom-Nikkor
24-120mm f/3.5-5.6G ED-IF AF-S VR Zoom-Nikkor
200-400mm f/4G ED-IF AF-S VR Zoom-Nikkor
70-200mm f/2.8G ED-IF AF-S VR Zoom-Nikkor
80-400mm f/4.5-5.6D ED VR AF Zoom-Nikkor
300mm f/2.8 ED-IF AF-S VR Nikkor
70-300mm f/4.5-5.6G AF-S VR Zoom-Nikkor
200mm f/2G ED-IF AF-S VR Nikkor
105mm f/2.8G AF-S VR Micro-Nikkor

In-Camera IS in Practice

Olympus E510, 70-200mm

This sequence was taken on an Olympus E510, featuring moving sensor-based Image Stabilisation, fitted with an Olympus 70-200mm lens. Shots were taken at varying shutter speeds with the IS switched on, then again with it off.

STABILISATION ON	STABILISATION OFF
1/15th	1/15th
1/30th	1/30th
1/60th	1/60th
1/125th	1/125th
1/250th	1/250th

In-Camera Stabilisation

This method uses a moving sensor

Quite logically, as camera instability-induced blur is created by the image moving across the face of the image sensor, an alternative to manipulating the lens optics to compensate for the shifting image is to move the image sensor itself. This is moving sensor image stabilisation.

The basic mechanism is much the same as Optical IS. A real time feedback loop connected to gyroscopic motion sensors triggers actuators that move the stabilisation element, in this case the sensor instead of part of the lens optics, and shifts the sensor to keep the shifting image stationary from the point of view of the surface of the sensor. Moving sensor IS was developed specifically for digital still cameras and early adopters were Ricoh and Minolta, the latter, with its partner, Konica, introducing the world's first moving sensor IS system for a digital SLR. Now, Pentax, Samsung, Sony (which took over the Konica Minolta technology), and Olympus have developed their own moving sensor IS systems for DSLRs, while Nikon, Olympus, Casio and Ricoh use moving sensor IS in selected compact digital still camera models.

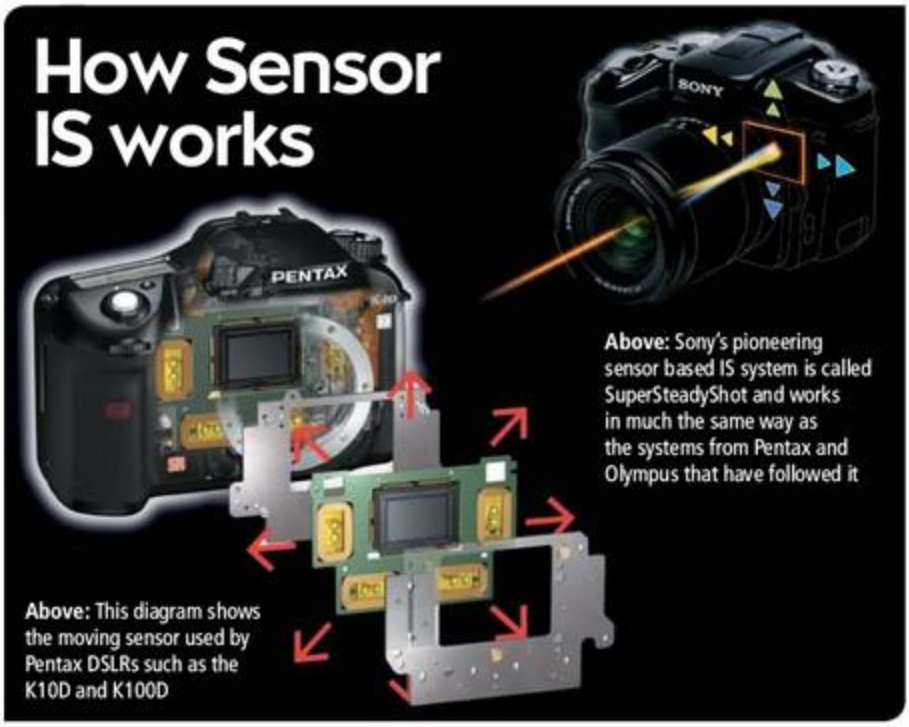
APPARENT ADVANTAGES

In theory, a moving sensor system has some apparent advantages over OIS systems. The sensor moves in a two-dimensional plane, so the lens optics aren't compromised. If you have a DSLR with a moving sensor, you can apply the benefit of IS to any lens, so avoiding the price premium and limited choice of interchangeable IS lenses. Some DSLR manufacturers also claim that by vibrating the sensor, dust can be shaken off. In practice, this has yet to be verified – it seems dust removal needs a more sophisticated kind of sensor vibration to be effective.

> You can apply the benefit of IS to any lens fitted

In reality, moving-sensor IS has its own limitations. For example, if the sensor captures an image in an extremely shifted position, more of the image will lie near the optically less-ideal perimeter of the lens' projected image circle. It has also been suggested that there is less correction latitude compared with OIS systems, partly because the gyro sensors are positioned in the camera body, the least sensitive part of a camera, especially when fitted with a long telephoto lens. Moving-sensor IS systems need to know the focal length of the lens to operate efficiently and this means older, non-CPU lenses, may not work properly.

How Sensor IS works



Above: Sony's pioneering sensor based IS system is called SuperSteadyShot and works in much the same way as the systems from Pentax and Olympus that have followed it

Above: This diagram shows the moving sensor used by Pentax DSLRs such as the K10D and K100D

ABOVE: Low light interiors are another situation where image stabilisation can be an extremely useful aid to sharp pictures

What Digital Camera INVESTIGATES

IAN EXPLAINS

A less popular method of in-camera stabilisation

Electronic Image Stabilisation

Electronic Image Stabilisation, or EIS, was, again, developed for video cameras, initially as a lower cost alternative to Optical Image Stabilisation or where space constraints ruled out an optical solution. Today, EIS in still digital cameras encompasses several different approaches to image stabilisation.

The original EIS type of system attempts to visually stabilise a shaking picture by dynamically altering the electronic framing of the scene.

The benefit of EIS for digital still cameras is not significant

Sometimes this dynamic framing is controlled by gyro sensors, but usually, to keep costs down, the system monitors the scene itself and relies on areas of the scene to act as markers for framing stability. Although this can work well enough with video footage, artefacts introduced by the required image processing, plus the fact that blur is not physically compensated for, means that the benefit of this kind of EIS for digital still cameras is not significant.

ISO Stabilisation

But non-mechanical means can be successfully used to artificially boost the sensor sensitivity and so, speed up the shutter to minimise the effects of both camera shake and subject movement. Boosting sensitivity is a compromise, though, because the price paid in quality is additional noise graininess and often compressed dynamic range, leading to over-dark shadows and blown out highlights. But in the end, this may be a price worth paying.

Some companies, most notably Fujifilm, have been very succesful in reducing noise at high ISOs to provide a viable high quality alternative to IS.

It's now also increasingly common to find sensitivity-boosting image stabilisation complementing moving sensor or optical systems, too.

Which cameras boast sensor IS?

Here's a list of current compact cameras and DSLRs that use in-camera image stabilisation

COMPACTS WITH MOVING SENSOR IS

CASIO
Casio Exilim EX-7
NIKON
Nikon CoolPix S10
RICOH
Caplio R5
Caplio R6
Caplio R4
Caplio R3
Caplio GX100
OLYMPUS
Mju 780
Mju 760
Mju 750
SP-550UZ

DSLRS WITH MOVING SENSOR OIS

PENTAX
Pentax K-100D
Pentax K-100D Super
Pentax K-10D
SONY
SonyAlpha A100
SAMSUNG
Samsung GX-10
OLYMPUS
Olympus E-510

COMPACTS WITH ELECTRONIC IS

HP PHOTOSMART
R967
R837
KODAK EASYSHARE
M753
M853
M873
M883
ZD710
PENTAX OPTIO
A30
W30
T30
M30
A20
A10
CASIO EXILIM
EX-Z1000
EX-Z1200
EX-Z65
EX-Z1050
EX-S770
EX-S600
EX-S500
EX-Z75
EX-Z700
EX-Z60
EX-Z120
EX-Z10
EX-Z110
EX-Z850
NIKON
Nikon Coolpix S200
SAMSUNG
NV10
S1050
S850
S730
S630
Pro815
OLYMPUS
Mju 725SW
Mju 740
Mju 770SW
Mju 1000
SP-510UZ

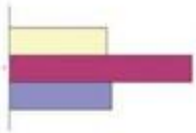
STABILISATION

Lab Tests

We tested a range of compacts and DSLR/lens combinations to see how they compared. There isn't a recognised standard test procedure for measuring the effectiveness of IS systems. Our tests involved photographing a DXO Analyzer test target, both on a tripod with IS switched off, for optimum reference conditions, then handheld with IS off and switched on. The testing is indirectly influenced by the skills of the test photographer when shooting handheld, so the results should only be used as a guide.

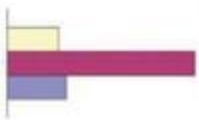
Multiple test shots were taken to build up a statistically representative log of results. The DXO system measures the test images, by computer, for blur, to give a BXU (Blur eXperience Unit) value. The beige bar is the tripod based reference, the maroon bar is with IS off. Other colours represent the successive increased exposure values as listed in the following paragraph.

The shorter the bar is indicates less blur within an image, and so is preferable. The results below are averages of the many test shots. Throughout, our main focus is on DSLRs: we tested at shutter speeds of 1/15, 1/8 and 1/4sec, but we've also included some compacts, which were tested at a speed of 1/30sec.



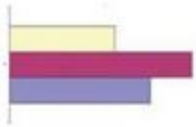
Panasonic Lumix DMC-FX30

IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 100mm
CONCLUSION: *The Panasonic Lumix Mega OIS system worked impressively well, even slightly surpassing the non-IS reference result, which suggests that Panasonic adds some sharpening to boost its mechanical IS system.*



Nikon CoolPix P-5000

IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 100mm
CONCLUSION: *The Nikon CoolPix P-5000 was surprisingly susceptible to shake compared to the Samsung NV7 OPS, but its OIS system did well to minimise shake-induced blur.*



Samsung NV7 OPS

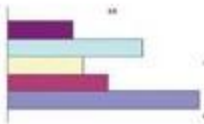
IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 100mm
CONCLUSION: *Relatively large for a compact, with its big lens barrel and solid metal construction, the Samsung NV7 OPS is easy to hold steady and at 1/30th sec the benefit of IS isn't as great as with other compacts. Its best at slower speeds.*

Canon Ixus 950 IS

IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 100mm
CONCLUSION: *The tiny Canon Ixus 950 is relatively difficult to keep steady, especially if you have large fingers. But Canon's IS system delivers a useful improvement in stability at 1/30th second.*

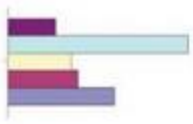
Canon EOS-30D with 70-200mm f/4 IS L lens

IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 105mm
CONCLUSION: *With IS switched off, the Canon L-Series 70-200 f/4 is does show sensitivity to camera shake and this is mopped up impressively when IS is switched on at 1/15th second shutter speed, but the IS performance is rather disappointing at 1/8th and ¼ second exposures.*



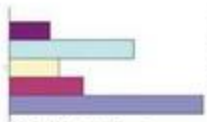
Panasonic Lumix DMC-LI with Leica Vario Elmarit 14-50mm f/2.8-3.5

IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 100mm
CONCLUSION: *The Panasonic Lumix DMC-L1 is a large camera and its 14-50 standard zoom is equally large and heavy, so the camera has some inherent stability. But even so, the IS proves to be useful at 1/15th second exposure and 1/8th, but its effectiveness drops at ¼ second exposure.*



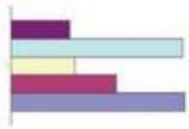
Nikon D40x with 55-200mm f/4-5.6G IF-ED Zoom-Nikkor

IS TYPE: OIS
LENS FOCAL LENGTH (135 equiv): 83mm
CONCLUSION: *At its short end, the Nikkor 55-200 VR is extremely sharp, but unlike the 70-300, the IS system does a remarkable job of absorbing shake, right down to a quarter of a second handheld*



Pentax KI0D with 24-90mm 24-90mm f3.5-4.5 AL IF

IS TYPE: Moving sensor
LENS FOCAL LENGTH (135 equiv): 110mm
CONCLUSION: *The Pentax K10D's moving sensor IS performance is very good at 1/15th shutter speed, and useful at 1/8th, but runs out of steam at ¼ second.*



Olympus E-5I0 with Digital Zuiko 50-200mm f/2.8-3.5

IS TYPE: Moving sensor
LENS FOCAL LENGTH (135 equiv): 100mm
CONCLUSION: *Despite the large size and weight of the fast f/2.8-3.5 50-200mm Digital Zuiko tele zoom, the non-IS handheld result reflected a fair bit of shake. The Olympus moving-sensor IS system coped very well at 1/15th, but its performance at 1/8th was inconsistent, and although not quite as stretched at ¼ second as the Pentax K10D, the performance at this speed showed a significant drop- off.*

Sony Alpha A100 with Sony 75-300mm f/4.5-5.6

IS TYPE: Moving sensor
LENS FOCAL LENGTH (135 equiv): 113mm
CONCLUSION: *At 75mm (113 equivalent) and with the aperture at f/10 this lens was surprisingly soft. It's small and light, and handheld without IS it demonstrated a lot of shake blur.*

Overall Conclusion

Our results proved that image stabilisation, both moving sensor and optical types, work usefully at medium to low shutter speeds - image stabilisation is no gimmick. However, the better optical, or in-lens OIS, systems did demonstrate a higher 'headroom' of performance over the moving sensor solutions. Not all in-lens OIS systems were superior, though. Even with very long exposures, both IS systems were able to deliver acceptably sharp images more frequently than without IS. Instead of expecting every shot to be shake-free, use IS to improve the chance of getting a 'keeper'. So a tip might be to shoot extra frames in the hope that the IS will get at least one sharp for you. Of the sensor shift systems, both the Pentax K10D and Olympus E-510 performed well. Of the OIS lenses we looked at, the Nikkor 55-200mm VR turned in an exceptional performance across the board. This can be explained by Nikon's latest VR electronics, which also showed a significant improvement over the older 70-300 VR Nikkor. The 55-200 VR was, by a significant margin, the best performer out of all the lenses tested here.

Pentax innovative ideas

do you know what the Pentax K10D can do?

The **Pentax K10D** is filled with new and innovative features that make using it a real pleasure and show that Pentax has a keen understanding of what photographers want and need. Pentax has focused on new functions that make a measurable difference to the photographer's experience – whether that means taking care of exposure so you can concentrate on composition and timing, or allowing you to stay out in the rain. Here are a few of them...

3D anti-shake

User-induced camera shake is very difficult to correct, as the movement that needs compensating can be in any direction. Most in-camera anti-shake systems use a shifting sensor that moves left and right and up and down within the sensor mount. Attached to the mount by mechanical parts, the sensor's compensating shifts are only able to be truly effective if the camera is being moved parallel to the subject. In real life, camera shake is three-dimensional. We move the camera up and down and left and right, as well as tilting it toward the ground or sky. When we use long lenses we are especially prone to waving the camera around in a way that most in-camera systems find impossible to work against.

The K10D's anti-shake system allows the sensor to move in three dimensions to correct for all sorts of camera shake. The sensor is held in place by a magnetic field and can move left and right, up and down and out away from its mount. With this innovative system users can safely use long telephoto lenses as well as wideangles with shutter speeds that normally produce blurred images.

one-touch raw

How do you decide whether to shoot in raw or JPEG mode? We all love the convenience of working with JPEGs, but sometimes only a raw file will make the most of a subject. Shooting with the camera set to the raw + JPEG mode can serve as a compromise, as well as a form of insurance, but doing this can waste space on your memory card. The Pentax K10D's one-touch raw button allows users to set the camera to shoot convenient JPEG files in the knowledge that should a situation arise that requires the flexibility of raw capture, it is just a single button press away.

aperture and shutter settings priority

There are occasions when it is essential that we maintain a specific aperture and shutter speed setting to create the exact effect we have in mind. You might need a particularly shallow depth of field combined with a fast shutter to shoot long lens portraits of an active child, for example. You might set f/4 at 1/500sec. Perfect. But then the sun goes behind a black cloud and light levels drop dramatically. You have a choice: switch to 1/60sec and worry about subject movement or take the time to go into the menu system to crank up the ISO rating by 2EV. Then the sun comes back out again...

Using Pentax's TAV (Time Aperture Value) mode you can maintain a constant aperture and shutter speed pairing while the camera alters the ISO rating automatically to compensate for changing light levels. That just makes life easier.

meter-assisted manual exposure

Pressing this button when the camera is set to manual exposure mode asks the metering system to suggest aperture and shutter speed values to suit the scene – and it sets them as a starting point for your exposure. When setting the camera to manual exposure mode you will often find the values last used are a long way from those you need now. You will then have to scroll through shutter speeds and aperture values to find the right exposure before you can think about whether you want to make a scene lighter or darker. Just pressing this green button removes the hassle and gets the camera ready in a fraction of a second.

weather-proofing

The Pentax K10D is sealed at every joint and under every button and dial to protect it from moisture and dust. SLR cameras can't be classed as waterproof because water will always get in via the lens mount if the camera was completely immersed, but with the lens fitted, the K10D can withstand some pretty tough weather conditions. Whether you're shooting from the touchline of a football match or caught out in a storm, the K10D will keep working and won't let the hostile environment in. So while everyone else heads for cover, you can carry on catching the action.

22-bit AD conversion

The Pentax K10D uses a 22-bit analogue-to-digital converter to create digital files from the light signals its sensor collects. This creates up to 4.2 million grades of tone. Other cameras use 12-bit conversion, which produces 4,096 tonal gradations. Stored 12-bit raw or 8-bit JPEG files are compressed to normal sizes, but from the starting point of having 1024 times more data, the saved files will provide a much more accurate rendition of the scene you shot than other cameras can.

for more information visit Pentax at www.pentax.co.uk PENTAX

What Digital Camera
What to buy... and how to use it

TRIED & TESTED

Olympus E-510 p42
The latest 10MP DSLR makes a splash

£200 Compacts p55
Six compacts get the WDC treatment

Monopods p60
For when a tripod just won't do...

OUR TOP PICKS

The latest must-have cameras, software and gadgets have been rated and scored by our team of experts

P49 Zoom Lenses
...we focus on six under £200

P63 Lightroom 1.1
...latest update from Adobe

OLYMPUS E-510 TEST p42

"...one of the most competent metering systems on any DSLR..."

AT A GLANCE

Latest Tests...

From budget compact options to the latest DSLR, see how our selection of this month's hottest products did under the WDC test

Olympus E-510	p42
Zoom Lenses – Group Test	p49
£200 Compacts – Group Test	p55
Monopods – Group Test	p60
Fujifilm A800	p62
Nikon L12	p62
Adobe Lightroom 1.1	p63
Canon Ixus 950	p64
Vivitar 6200w	p64
National Geographic Bag	p65
Pantone Huey Pro	p65
Books	p66

Our Awards

Products that score **85%** and over get a WDC Recommended badge, while those products which score **90%** and over get a WDC Gold Award badge.

What Digital Camera RECOMMENDED

What Digital Camera GOLD AWARD

THE BIG TEST

Our in-depth review of this month's hot gear

THE LATEST 10MP DSLR

Olympus E-510

Hot on the heels of its E-410 sibling comes the second new DSLR from Olympus – the E-510. We see how it shapes up...

BURNT CLOUDS
Although the gatehouse is correctly exposed, the sky has burnt out far too easily due to the camera's limited dynamic range

NOISE
Taken at ISO 200, there's no visible noise in this image and even beyond ISO 400 there's not much to complain about

10MP Price £600
Web www.olympus.co.uk
Tested by Chris Gatcum

It seems to be that Olympus cameras are a bit like buses – you wait for one new model to come along, then two turn up at once. Last month we took a look at the E-410 – the smallest and lightest DSLR on the market – and this time round it's the turn of its bigger brother, the E-510.

Like the E-410, the E-510 is an update (to the E-500 in this instance) rather than a 'new' camera. But this hasn't prevented it from seeing some pretty radical changes, and it appears to have benefited from the designer's knife in far more areas than the E-410. It is replacing a significantly older camera though.

Arguably, the original E-500 was the first 'proper' Four Thirds camera for the enthusiast, even though it was actually the third DSLR to join the Olympus range. When it arrived, we had already seen the Olympus E-1, but that came at a price that few could justify. And then there was the E-300, which, though billed as 'for the hobbyist', didn't deliver in looks or performance.

Yet when the E-500 arrived it set the standard for Four Thirds cameras. Combining an affordable price, decent performance and the look and feel of a 'traditional' DSLR, it was perhaps the saviour of an E-System that appeared to be losing its direction. So does its successor follow in its footsteps or is it a further footnote in the potted history of Olympus DSLRs?

FEATURES

Cast an eye down the respective spec sheets of the E-500 and E-510 and it's immediately apparent that the latest camera incorporates numerous new Olympus technologies. However, cast your other eye down the features of the E-410 and you'll see that both newcomers appear to offer a very similar specification.

For a start, the E-510 has a 10-million-pixel LiveMOS sensor (that it almost certainly shares with the E-410) and a new processing engine, dubbed Truepic III. This is the same as the processor used in the E-410 and it appears to have had the exact same effect on the E-510: boosting the continuous shooting rate to eight Raw frames or unlimited High Quality (HQ) JPEGs at a rate of three frames per second.

In addition, the E-510 now uses a USB 2.0 Hi-Speed connection and the 2.5in, 230,000 pixel HyperCrystal LCD includes Olympus's Live View system (again like the E-410).

And the E-510 also houses the company's 'dust busting' Supersonic Wave Filter.

With so much in common you could be forgiven for thinking that Olympus has developed one set of camera technologies and simply put them in two different bodies, but this isn't the case. The thing that marks them apart is the inclusion of Image Stabilisation in the E-510, which perhaps can't be shoehorned into the E-410's smaller body-shell (yet).

Like Pentax's Shake Reduction, Samsung's Optical Stabilisation and Sony's Anti-Shake systems, Olympus has fitted the E-510 with a 'mobile' sensor that moves to counter the effect of camera-shake, simultaneously turning any Four Thirds lens into an image-stabilised one. Two stabilisation modes are available in this instance – one that works to counter both horizontal and vertical shake and a second that counters only vertical shake, so if you're panning with your subject (at a motor sport event, for example) the camera doesn't try to correct for this deliberate movement.

However, this seems to be the only big difference in terms of features between the E-510 and the smaller E-410, as the photographic functions are a near-perfect match.

This means the photographer has access to what is one of the most comprehensive exposure metering systems on any digital SLR, comprising 49-zone ESP metering, centreweighted and spot patterns, with the obligatory highlight and shadow spot options that only Olympus uses.

You also benefit from Program, Aperture Priority, Shutter Priority and Manual shooting modes, or, if you're not quite ready for the advanced settings (or don't want to worry about them) you can choose from one of 18 scene modes or stick the camera on automatic. However, in auto ISO it will be restricted to ISO 100-400, whereas more adventurous types can manually set the ISO between 100 and 1600 in precise 1/3EV increments.

...one of the most comprehensive metering systems

In any case, there's the option to shoot Raw or JPEG files (or both), with dual media slots for xD and CompactFlash cards ensuring you've got plenty of choice when it comes to maximising your storage capacity.

DESIGN

While the photographic side of the E-510 appears to be lifted straight from the E-410, the design hasn't. Unlike the slimmed-down E-410, the E-510 carries a bit of bulk with it – weighing in at 460g (the E-410 is 375g) it's wider and deeper too.

But don't for a second think that just because the E-510 is bigger and heavier it's somehow unwieldy; it isn't. In fact, I actually prefer the added substance of the E-510 to the E-410. This is perhaps slightly ironic given I was brought up on 35mm Olympus OM system SLRs which bear a much closer resemblance to the E-410, but the E-510's chunkier right-hand finger grip just feels much more secure and comfortable. Part of this may also be because the E-510 doesn't have the inconveniently placed strap lug on its side like the E-410 does.

Aside from the grip, the control layout is ultimately very familiar – not only echoing the E-410, but also the E-500 before it. The size of the body means the controls appear to have a little more space to 'breathe' than they do on its smaller sibling, which in turn makes the camera look less cluttered. On the top there is the on/off switch sitting at the base of a neatly designed mode selector dial. Unlike some DSLRs, the mode dial doesn't try to cram all the camera's scene modes onto its small circumference, instead offering the most commonly used settings, automatic and the PASM quartet for more experienced users. The 'lesser' scene modes are accessed through the 'scene' setting on the dial.

Just behind and to the right of the dial is →

Image quality visit www.whatdigitalcamera.com for image samples

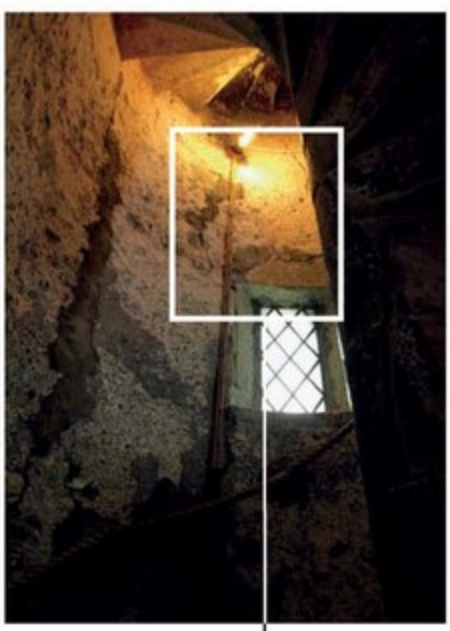
As the Olympus E-510 appears to share the same sensor as the E-410, and certainly the same processing engine, it's almost a foregone conclusion that it will produce similar images – especially when we factor in their identical metering system and kit lenses.

But, as we saw in last month's test of the smaller camera, this is certainly not a bad thing. The E-510's white balance proves to be reliable in all situations, and even when faced with a mixture of tungsten lighting and daylight the automatic setting can be relied on to deliver a perfectly acceptable image.

The 49-zone ESP metering is also reassuringly consistent, and if you want to set the camera to its multi-area metering pattern, you will be guaranteed a high success rate – it's only when you start pointing the camera at predominantly light or dark scenes that it under or overexposes accordingly. This is typical of this kind of metering pattern in all DSLRs, so it would be unfair to describe it as 'wrong' in any way.

However, as with the E-410, it's the way in which noise is dealt with from the LiveMOS sensor that really impresses. At the lower reaches of the ISO range – which is the full ISO 100-400 range if you use automatic ISO selection – noise just doesn't appear, even when you take 10MP images and produce A3 prints from them. Even beyond ISO 400 there's not much to complain about. At the maximum ISO of 1600 it's true that there's some texture in the images, and this does start to take the edge off fine detail to deliver slightly soft pictures. However, it's nothing a touch of sharpening in your image-editing package can't fix.

Yet just as the E-510 carries all the positive traits of the E-410, so it suffers in the same area too – it has a somewhat limited dynamic range, which is most likely due to the tiny photosites on the E-510's FourThirds sensor. This means that while the metering system will give the 'correct' exposure, this can be accompanied by a loss of detail in highlight or shadow areas – or both if the scene is naturally quite contrasty.



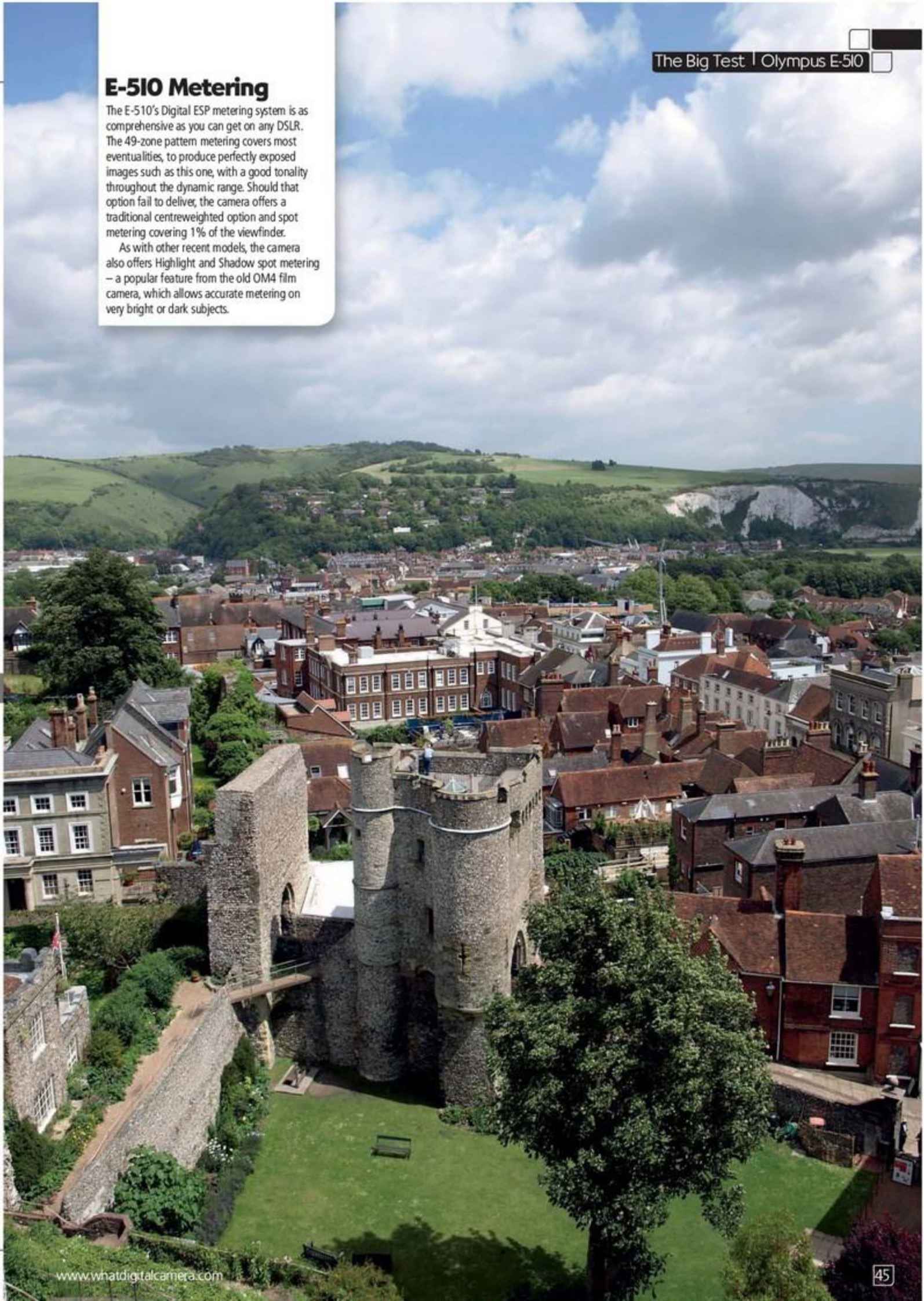
Tones The 'natural' colour mode has prevented the colours being too overpowering in this shot

Mixed Light The automatic white balance has balanced the warm glow of the tungsten lighting with the daylight from the window

E-510 Metering

The E-510's Digital ESP metering system is as comprehensive as you can get on any DSLR. The 49-zone pattern metering covers most eventualities, to produce perfectly exposed images such as this one, with a good tonality throughout the dynamic range. Should that option fail to deliver, the camera offers a traditional centreweighted option and spot metering covering 1% of the viewfinder.

As with other recent models, the camera also offers Highlight and Shadow spot metering – a popular feature from the old OM4 film camera, which allows accurate metering on very bright or dark subjects.



the E-510's control wheel, which operates either the aperture or shutter setting in the relevant priority mode, or allows you to adjust the paired setting in Program. In Manual mode the wheel takes control of the shutter speed, while pressing and holding the exposure compensation button near the shutter release and simultaneously turning the dial adjusts the aperture. Like most Olympus cameras, this configuration isn't set in stone, and you can customise the set-up so the control wheel activates exposure compensation in Program mode, or switches the aperture/shutter speed adjustment method depending on which you use more often. However, two control wheels (one front and one rear) would still be preferable to the sometimes finger-contorting rituals demanded by a single control point.

As with the E-410, the controls on the back of the camera are neatly laid out to either side of the rear LCD. Like most enthusiast DSLRs there's the option of accessing common settings directly on the rear LCD display, as well as through the four-way pad or the menu system. For me, using the LCD readout is the quickest and most intuitive method, as the various parameters are already on the screen, and making any adjustments becomes second-nature after only a short while with the camera. Moreover, as you don't have to hunt around the menu screens or remember which buttons to press in what order, it encourages you to be a little more experimental, perhaps trying options you may otherwise ignore. In turn, you'll learn more about the camera and its capabilities.

PERFORMANCE

The original E-500 could never be described as a 'fast' camera. Its processing engine and modest buffer restricted both the continuous shooting speed and the number of frames that could be recorded in succession, while images weren't transferred to the memory card instantly. As a result, the E-510's predecessor – while acceptable at the time – feels decidedly slow in modern company.

With its new Truepic III processor the E-510 has taken a massive step forward – just as the E-410 stands head-and-shoulders above the E-400. The E-510 still only achieves a modest eight-frame 'burst' in its Raw continuous shooting mode, but it's unlikely that sports enthusiasts would want to shoot in Raw mode, and if you switch to SHQ JPEGs (the highest-quality JPEG) you can happily fire off a dozen frames before the camera needs to clear its memory. Alternatively, if you don't mind a little extra compression you can shoot unlimited HQ JPEGs.

> The new processor is a massive step forward

As mentioned previously, another technology to make its way into the E-510 – and a first for Olympus DSLRs – is Image Stabilisation. Accessed via the 'IS' button on the rear, there are two operation modes for the IS (three if you include 'Off'), which basically allow you to set the E-510 to try to counter all camera shake, or 'lock' the system so that it ignores the panning action you might employ when tracking a moving subject at a sports event. The effectiveness of the Olympus stabilisation is noticeable, and will consistently give you a two-stop advantage when it's activated. This means you can use shutter speeds two stops

WHAT'S THE ALTERNATIVE?

There are plenty of ten-megapixel DSLRs on the market... so what else should you consider?

Sony Alpha 100

The 'daddy' of the 10-million-pixel enthusiast DSLRs, you can pick up a Sony Alpha 100 for a silly-money price if you shop around, but it's starting to look dated.

Olympus E-410

If you can live without Image Stabilisation, the E-410 delivers the same results from a smaller, lighter (and cheaper) package.

Samsung GX10

Samsung's GX10 has a better build quality, a similar resolution and is also a fraction cheaper. It doesn't have the same range of digitally optimised lenses though.

TAILOR MADE

There are plenty of ways to accessorise your E-510, so you can tailor it to your specific photographic needs

GENERAL PHOTOGRAPHY

If you just want to snap whatever takes your fancy the E-510 **twin lens kit** is your best bet, covering a **28-300mm** zoom range with just two lenses.

LANDSCAPE PHOTOGRAPHER

Filters are essential if you want to get the best from your landscape shots. A **neutral density graduated filter** is ideal for preventing burnt-out skies, while a **polariser** will let you darken skies and control reflections. See our feature, p78.

WILDLIFE PHOTOGRAPHER

For the ultimate 'pulling power' look no further than the **Zuiko 300mm f/2.8.** No one else makes a fast, 600mm equivalent lens in such a compact package and it's perfect for shy or dangerous subjects.

Left side Flash and drive mode options are selcted on the left of the top plate

Right side The most common exposure and scene modes are accessed on the right

slower than are normally recommended when handholding a camera: for example, you can enjoy shake-free images at 1/100sec with a 400mm equivalent lens, rather than having to use 1/400sec or faster. It also means you can use a slower ISO setting if you choose, so you can get away with shooting at ISO 200, when ISO 800 would normally be required to achieve your 'safe' shutter speed.

A further Olympus-developed technology is the Live View LCD, which was covered in detail in last month's test of the E-410. Essentially the E-510 uses the same system, so you press the display button once to flip up the mirror in the camera and activate the rear LCD. You can then press the 'OK' button to zoom in to 7x magnification and focus manually, using the LCD screen as a guide. However, just as it has the benefits of the E-410 for landscape, macro and still-life photography, so it has the shortfalls too, and you have to remember to set the camera to manual focus before activating Live View – the camera doesn't automatically switch it itself.

Which only leaves the AF performance to talk about. The simplest answer to this is to see last month's review of the E-410. Sharing the same three-point AF system, the E-510 delivers a comparable performance, proving perfectly capable in most situations where the light's good, but hesitating a touch in low contrast and/or low light situations.

VALUE

The E-510 costs roughly £100 more than the E-410, regardless of whether you buy the single or twin lens kit. Given that the camera is largely the same (photographically speaking) this means you're paying a £100 premium for Image Stabilisation. As this effectively converts any lens fitted to the camera into a 'stabilised' optic (including manual OM lenses) I'd say it's worth every penny.

SPECS & SCORES

MANUFACTURER:	Olympus
MODEL:	E-510
PRICE:	£600
SENSOR:	17.3 x 13mm LiveMOS sensor with 10 million effective pixels
MAX IMAGE SIZE:	3648 x 2736 pixels
MAX PRINT SIZE:	12 x 9in @ 300ppi
MAGNIFICATION:	2x
LENS MOUNT:	Four Thirds
REC FORMAT:	Raw, JPEG, Raw+JPEG
SHUTTER SPEEDS:	60-1/4000sec + Bulb
ISO:	Auto 100-400 / Manual 100-1600
EXP MODES:	Auto, Program, Aperture Priority, Shutter Priority, Manual, 18 Scene
FLASH:	Built in, GN12m@ISO 100 Hotshoe
FLASH SYNC:	1/180sec
SYNC SOCKET:	No
DRIVE MODES:	Single, Continuous (max. 3fps)
METER:	49 Zone multi-pattern, Centreweighted, Spot, Highlight spot, Shadow spot
WHITE BALANCE:	Auto, manual, 7 presets, Kelvin
COLOUR MODES:	sRGB / AdobeRGB
FOCUS:	3 AF points with manual or automatic selection
VIEWFINDER:	95% coverage
MONITOR:	2.5in LCD with 230,000 pixels and Live View
CONNECTION:	USB 2.0 Hi Speed
FILE:	EXIF 2.2, DCF, DPOF, PIM III
VIDEO OUTPUT:	Still only
POWER:	Li-Ion, Optional AC Adaptor
STORAGE:	Dual slot: CompactFlash Type I/II or xD
DIMENSIONS:	136 x 91.5 x 56mm
WEIGHT:	460g (without battery / card)

FEATURES	19
DESIGN	18
PERFORMANCE	17
IMAGE QUALITY	18
VALUE	18

✔ **WHAT WE LIKE**
Noise control, Dual-mode Image Stabilisation, Live View LCD mode, Supersonic Wave Filter

✘ **WHAT WE DON'T LIKE**
SHQ JPEG burst depth slightly limited, Limited dynamic range

What Digital Camera GOLD AWARD

TOTAL 90%

OUR VERDICT

In-camera image stabilisation and dust-reduction are high on most enthusiasts' DSLR shopping lists, but all too often we see one without the other, or we get a weak compromise. With the Olympus E-510 we're getting both of these things and, most importantly, they both work. On top of that, you're able to turn the rear LCD on and use the camera like a compact (albeit with manual focus), which is exactly what you want for macro, still-life and landscape photography. Throw in a high-resolution 10MP sensor that delivers largely noise-free images, and all the secondary features you're ever likely to need and there's no doubt in my mind that the E-510 is currently the definitive Four Thirds DSLR.

GROUP TEST
We test products so you don't have to

Tele-Zooms
for £200 and under

Looking to supplement your DSLR with a second lens? Jamie Harrison tests six budget tele zooms

Zoom lenses are both useful and popular, offering several focal lengths in one neat and lightweight package. And for many people, a telephoto zoom is top of the shopping list after they purchase a new DSLR, particularly for sport and wildlife photography.

We've selected a few from a favourite focal range – the popular 70-300mm – which offers excellent magnification in a reasonably small shell. In fact, on most consumer DSLRs, these lenses offer the equivalent of around 105-450mm (35mm film camera equivalent), so can appear even more attractive to the telephoto aficionado.

The group is something of a mixed bunch. This focal length has always been popular with film users, so half of the set are traditional lenses – that is they have not yet been upgraded by the manufacturers for optimum performance with digital cameras, though they are suitable for use with DSLRs. The Sony in particular stands out, as Sony has never even made a film camera! Of the other three, they are all so-called 'digitally optimised' lenses, so in theory should perform well with a modern film sensor.

Canon EF 75-300mm f/4-5.6 III USM

Price £149 **Web** www.canon.co.uk

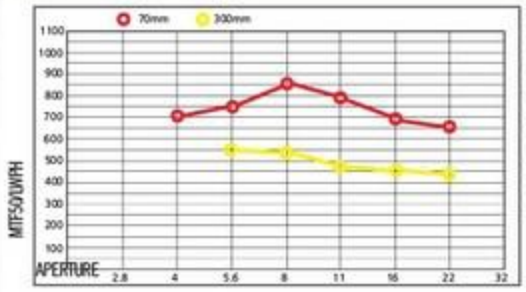
Canon's EF-S range is designed for the small APS-C sensor but all of the lenses in the EF range are suitable for APS and full-frame systems (either 35mm film or 35mm sized sensors). The question is, does the 75-300mm lens make the grade on the APS sensor? At just £149, it's an attractive proposition to the millions of 400D users, who are looking for a light telephoto zoom.

As an added bonus it includes a USM (Ultrasonic Motor) driven AF, making the autofocus quick and quiet, though at f/4 it's not the fastest light-gatherer in the world. The mainly plastic build quality is more than reasonable, and the inclusion of a metal lens mount is a positive. The grip around the main barrel is comfortable, though the zoom action is quite loose on the sample we tested. The focus ring can be used to focus manually even in AF mode – which is good for fine-tuning, but the action in AF mode is a little jerky, though smoother in manual mode.

The lens sharpness rarely rises above average for the group, with no outstanding performance spikes. This can be seen in the chart and also in the pictures themselves which have a softness, especially at the edges.

Chromatic aberration, however, ranges from fair to good at the 70mm end of the lens to pretty darn poor at the 300mm end, with a low of 2.8 pixels in the corner at f/8 – the worst result in the group.

LENS RESOLUTION



IMATEST MTF

Overall, the Canon lens is a lower to middle-class lens, that fails to offer anything out of the ordinary. It also fails to offer any compelling argument for the use of non-optimised zoom lenses on digital cameras.

AF Nikkor 70-300mm f/4-5.6 G

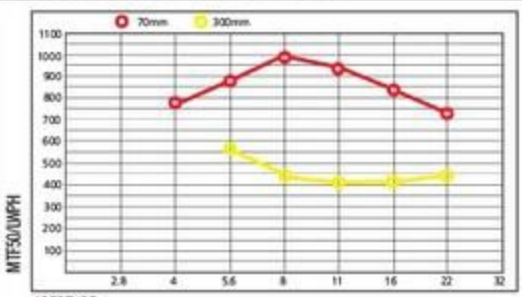
Price £169 **Web** www.europe-nikon.com

The notable thing at first sight is the plastic mount, which personally I have never had trouble with, but I know from anecdotal evidence that others have.

Otherwise the lens' plastic build feels sturdy enough for amateur usage, and the deep rubber grip on the main zoom barrel is comfortable to use. The manual focus ring is light but the AF motor prevents its use in AF mode. The Nikon lens forgoes Nikon's top line AF system the Silent Wave Motor (SWM), so this model is slightly slower and somewhat noisier than other Nikon optics. In a quiet room, such as the scholastic oasis that is the WDC sanctum, the lens whirrs and grinds loudly over the gentle keyboard tapping. While not showing the best results from our lab tests, there's consistently good control of chromatic aberration and at 70mm, excellent resolution, particularly at f/8.

The lens does suffer at 300mm though, with frighteningly poor performance which, unfortunately, blows all its good work at 70mm out of the window.

LENS RESOLUTION



IMATEST MTF

The Nikon optic has some good points, but is let down at maximum zoom with unsharp images that even the most undiscerning eye could probably pick out.

Olympus Zuiko Digital 40-150mm f/3.5-4.5

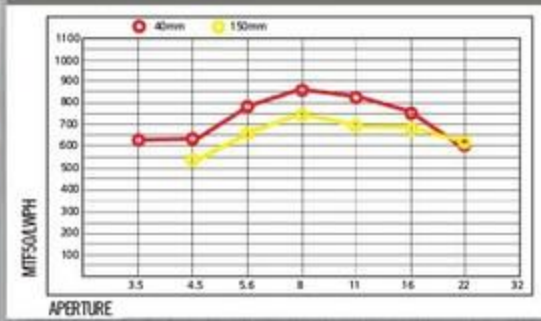
Price £199 **Web** www.olympus.co.uk

Because Olympus adopted the Four-Thirds system, the company developed a completely new lens system to everybody else. The smaller sensor means that focal length values need to be multiplied by two to gain the 35mm equivalent – so the 40-150mm length of this lens equates to 80-300mm in 35mm film terms.

This enables the lens to be smaller and lighter than the other lenses in the group, as well as having a shorter reach when used on digital SLRs. It's also the fastest lens (marginally) thanks to the f/3.5-4.5 maximum aperture and one of the few that is dedicated to, and will only work with, digital cameras. In use, the lens has a nice solid feel, despite its small size and light weight. The rubber grip of the zoom is secure, while the manual focus ring is quite deep with a smooth action.

This is not one of Olympus's top telephoto zooms, and the results reflect its budget status. While chromatic aberration is better controlled than some other lenses in the group, it's still present and doesn't stand out significantly from the Nikon – which also shows the best CA control. Resolution too is good, but only marginally better than some other lenses, though the lens is more consistent throughout the focal range – if not always the highest in terms of resolution.

LENS RESOLUTION



IMATEST MTF
For a budget lens, the Olympus puts in a good consistent performance, with crisp and sharp images, though with less of the focal magnification of the others on test.

Sigma 70-300mm f/4-5.6 APO DG

Price £159 **Web** www.sigma-imaging-uk.com

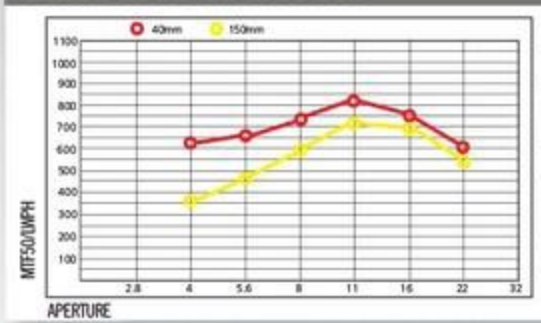
Coming from Sigma's DG range, this 70-300mm optic is suitable for film and digital sensors up to 35mm in size. The lens also contains an Apochromatic element using Special Low Dispersion (SLD) glass, supposedly more effective in the controlling of chromatic aberration.

The optic has a nice feel, thanks to the matt-velvet paint that Sigma uses to coat its lens barrels with. The zoom action is swift but could do with a bit of damping at the ends of the rotation, which can stop with a bit of a bump.

The lens doesn't have Sigma's Hyper Sonic Motor (HSM) found on some of its other lenses, but the AF is still reasonably and comparatively quiet.

The lens charts show good performance at the 70mm end, with excellent control over fringing, particularly in corners where this lens is the clear leader. At 300mm, the central control is as good as that of the Nikon and Olympus models, but falls short a little in the corners. Resolution is acceptable, if average, with some dropping off at 300mm.

LENS RESOLUTION



IMATEST MTF
This is a capable lens if not a champion, with some nice features and a decent performance for the price. The digital optimisation does seem to show some performance gains, particularly in respect to fringing control, though less so as the focal length is increased.

Sony 75-300 f/4.5-5.6

Price £179 **Web** www.sony.com.uk

This lens is a continuation of the old Konica Minolta line, so it can still be used on any old Minolta film camera bodies you may have knocking about. In fact, if you have one of the later Minolta 75-300mm lenses, chances are the optics are identical, so you needn't worry about upgrading.

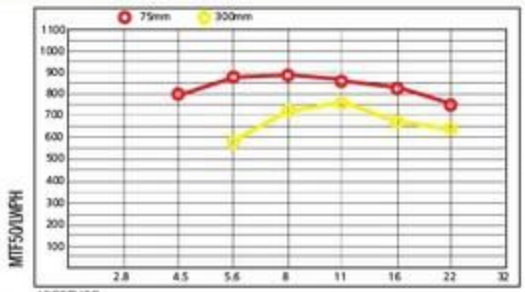
The zoom action of the Sony is a little stiffer than the others in the group, but not enough to be irritating. What is slightly more irritating is the loud grinds and whirrs of the AF motor, especially if shooting low-contrast subjects, where the AF struggles to latch onto the subject, hunting around for a few seconds. Combine this with the clunky shutter of the Alpha and you risk an ASBO for noise pollution!

It's not all bad news though – optically the Sony is a pretty good performer, with excellent performance throughout the aperture range at 75mm, and a similarly consistent performance at full reach.

Likewise, the chromatic aberration chart shows reasonable results at 75mm, though this is spoiled by increasing fringing as the focal length is stretched.

Ironically, the 300mm sweet spot of f/8 showing the best resolution at that focal length is where the CA hits its nadir, with a 1-2.2 pixel bleed from centre to corner.

LENS RESOLUTION



IMATEST MTF

While the Sony optic shows good and consistent resolution performance, and produces sharp images, it's let down at the 300mm end of the lens, with slightly high instances of chromatic aberration.

Tamron 70-300 f/4-5.6 LD Di

Price £169 **Web** www.intro2020.com

Tamron has formulated this lens to be suitable for digital cameras and film cameras, with an imaging circle covering the 35mm sized frame. The smaller APS-C sized sensors fall within this area, albeit giving a 1.5x magnification.

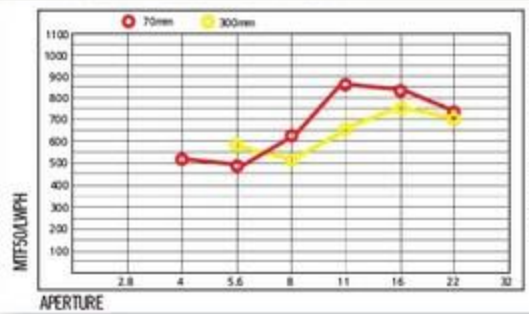
Tamron lenses usually have an attractive design, thanks in part to the gold trim and deeply grooved rubber zoom rings.

It feels good too, with a nice balance and easy handling; however the focus motors are somewhat slow in comparison to some of the other lenses. The Tamron has its own pace – leisurely – especially when focusing from near to far distances. The motor is quite quiet though, so won't disturb the wildlife as much as the Sony lens.

The lens performs best at smaller apertures, which is unusual, though it's not a bad performer overall.

Chromatic aberration is about average for this group, showing no particular advantage of Tamron's digitally integrated lenses over other makers' standard lenses.

LENS RESOLUTION



IMATEST MTF

Despite the Di tag, the Tamron lens puts in a somewhat average overall performance, not really making the most of the digital claims. It's also let down by the pedestrian focus motors.

AT A GLANCE

Overview

Image quality, specifications, our likes and dislikes, scores and more – you'll find it all here

Canon
An average performer with a general softness and high fringing

Olympus
Good all round performer, though still suffers from fringing problems

Sony
A better short lens than a long one, with low resolution and fringing at the 300mm end

Nikon
Performs best at the shorter end of the range, but deteriorates as you zoom

Sigma
A good general purpose lens, with good fringing control

Tamron
The fringing fails to impress and you need to stop down to get best results

Canon 70-300

Nikon 70-300

Olympus 40-150

Sigma 70-300

Sony 75-300

Tamron 70-300

	Canon 70-300	Nikon 70-300	Olympus 40-150	Sigma 70-300	Sony 75-300	Tamron 70-300
Focal length	75-300mm	70-300mm	40-150mm	70-300mm	75-300mm	70-300mm
Max aperture	f/4-5.6	f/4-5.6	f/3.5-4.5	f/4-5.6	f/4.5-5.6	f/4-5.6
Min aperture	f/32	f/32	f/32	f/32	f/32	f /32
Horizontal view	22-5	24-5	48-13	24-5	22-5	24-5
Vertical view	12-3	13-3	33-9	13-3	12-3	13-3
Diagonal view	26-6	27-6	56-16	27-6	26-6	27-6
Lens mount	Canon EF	Nikon	4/3	Son/Nik/Can/Pen/Sig	Sony (KM)	Can,Nik, Pen
Image size	35mm	35mm	4/3	35mm	35mm	35mm
Opt construction	13/9	13/9	13/10	14/10	13/10	13/9
Opt technology	NA	NA	NA	APO, SLD	NA	LD
Focus	USM AF/M	AF/M	AF/M	AF/M	AF/M	AF/M
Min focus	1.5m	1.5m	1.5m	95cm	1.5m	95cm
Filter	58mm	62mm	58mm	58mm	55mm	62mm
Lens hood	ET-60	HB-26	LH-61B	Circular hood	Circular hood	DA17
Dimensions	71x122mm	74x117mm	66x72mm	77x122mm	71x122mm	77x177mm
Weight	480g	426g	220g	550g	460g	435g
Price (RRP)	£149	£169	£199	£199	£179	£169
FEATURES	16	15	17	17	15	17
DESIGN	17	17	17	16	16	16
PERFORMANCE	14	14	17	17	16	15
IMAGE QUALITY	15	15	16	17	15	16
VALUE	16	16	17	17	16	16
✔ WHAT WE LIKE	USM AF system-quick and quiet	Good perfromance at 70mm	Reasonable performance, fastest maximum aperture	Reasonable performance throughout the range	Good 75mm performance	Good macro, nice design
✘ WHAT WE DON'T LIKE	Average results overall, nothing outstanding	Poor performance at the 300mm end	Shorter focal length after magnification is considered	Some sharpness fall off in the corners	Noisy and slow AF motor, poor CA at 300mm	Average performance, slow AF
TOTAL	What Digital Camera 78%	What Digital Camera 77%	What Digital Camera 84%	What Digital Camera 84%	What Digital Camera 78%	What Digital Camera 80%

AND FINALLY

Our Verdict

These are budget tele-zoom lenses but some of them are more equal than others

We can't expect these lenses to compete with more expensive ones, but if you're spending a couple of hundred quid, you want your money's worth. Though the Nikon and Canon have some good features the Nikon is let down by cheap build quality and the 300mm performance, whilst the Canon has bad chromatic aberration and some sharpness issues. It's worth noting that performance at the telephoto end drops throughout all the lenses on test – just some more significantly than others. The other lenses offer good performance, though none are outstanding. Sony's is the worst performer of these, while Tamron's efforts fail to make an argument for a digital tag. This brings us to Sigma and Olympus, both of which are digitally optimised and show performance gains, particularly in the areas of chromatic aberration control and, to some degree, sharpness. Thus both make a good case for upgrading lenses to digitally dedicated systems.

GROUP TEST

£200 models put through their paces

Compacts for £200 and under

Looking for a compact? Got a £200 budget? Well, there's something for everyone

Test by Matt Golowczynski

What Digital Camera COVER FEATURE

The number of recently released compacts together with the outgoing models they replace make now a fantastic time to either get the latest technology or snap up a bargain.

Just a quick glance at our Buyer's Guide compacts listing shows the array of models that are rapidly falling in price as their older siblings are introduced. For around £200, you can now choose from an expansive range of seven and eight-megapixel models, but what's better is that every manufacturer seems intent on offering something different. Whether it's full manual control you're after or just a slim and sexy shooter for a night out, there's something for everyone out there. We've tested six mid-range compacts to find out what's best suited to the needs of anyone thinking of a compact upgrade or flashy first-time buy.

Canon Ixus 75

7MP Price £195
Web www.canon.co.uk

Following our review of Canon's Ixus 70 in June's issue, this alternative launched at the same time offers much the same specification but sacrifices the viewfinder and opts for a 3in LCD screen in its place.

The same 3x optical zoom and 7MP sensor feature, as does the 80-1600 ISO range. Face detection and red-eye correction serve to improve portrait shots while ten scene modes facilitate correct exposure, as well as a movie and Canon's My Colours modes. Nothing particularly groundbreaking features within its specification, but then the Ixus range has always been about style and performance, rather than concentrating on gimmickery.

With its rounder edges, the design resembles the Ixus 65 model, and this, together with its metallic/plastic construction, feels good and handles well. It's not quite as heavy as other compacts within its range but feels like it wouldn't immediately fall to pieces should it be dropped.

Lightning fast

One of the more impressive aspects of the camera is its operational speed, with both start-up and focusing times being lightning fast. Certain things are a little annoying, though, such as a few of the buttons which are on the small side, but this doesn't undermine its performance a great deal.

Purple fringing is my biggest gripe with the camera, which together with a slight excess in sharpening tarnishes otherwise impressive images. Exposures are generally accurate and shadow detail is well maintained, with highlights faring well but to a slightly lesser degree. Colour is pleasing and noise is well controlled at ISO settings up to 200, and even at 400 is noticeable but not offensively so.

Olympus FE-250

8MP Price £185 **Web** www.olympus.co.uk

Olympus's FE range has always represented ease of use and good value, with each model becoming progressively more stylish. The FE-250 currently heads the range, incorporating an 8MP sensor and 3x optical zoom into its diminutive body.

An ISO-based Digital Image Stabilisation mode compensates for the effects of camera shake, with the ISO range itself stretching to 3200 on a full-resolution setting and 10,000 in a reduced mode, making the latter only suitable for smaller print sizes.

No need to read

The camera's explanatory nature whenever a different function has been selected is a nice touch, which is in addition to the 'Guide' feature, displaying 11 common techniques and taking you straight to the appropriate mode on which to shoot them. Not only that, but 15 scene modes are also offered making the manual seem almost redundant.

If one criticism is to be levelled at the camera, it should probably be with regards to its optical zoom. Admittedly, 3x is still considered to be a standard focal length and this does help to keep things compact, but with its predecessor boasting a 5x optical zoom in only a marginally bigger body its inclusion here would have seemed to be a worthy compromise.

Images at ISO 64 and 100 are sharp, with good colour and little noise and even at ISO 200, noise is well controlled. There is a touch of fringing present but highlights are well controlled and retain good detail through their gradation.

Samsung i70

7MP Price £180
Web www.samsungcamera.co.uk

Samsung's i70 isn't so much a camera as a multimedia extravaganza. Also accommodating an MP3 player, MPEG4 video recorder, multimedia player, text viewer and voice recorder, it seems surprising that the camera manages to feature a specification akin to that of many of its seven-megapixel peers.

Encased within a slide-out shell, the camera features a standard 3x optical zoom, an ISO range extending to 1000 and an Advanced Shake Reduction (ASR) mode. A 3in LCD screen adorns the back of the unit, but the only resolutions that take advantage of the screen's full size are the 1, 3 and 5MP widescreen options.

Wise... but unwieldy

A 'Wise Shot' mode takes two consecutive pictures – one with flash and one with the ASR – providing the option of both exposures, while a range of colour options and a custom setting allows the individual adjustment of red, green and blue tones within an image.

Handling, it has to be said, has been compromised by the unit's design. The slide-out body creates enough space for the LCD screen and a large menu pad but the latter is somewhat embedded, making a few buttons on the side awkward to press. The biggest annoyance, however, is with the lack of explanation once modes are chosen, providing just a simple icon as to their function. Focusing is speedy though, as is the start-up time.

With enough light, the camera can perform well but images can sometimes turn out a little 'soft' with a lack of detail. Highlights don't hold up too well either but fringing is well controlled.

There is no doubt a small demographic that will appreciate the i70's novelty value and multi-purpose functionality. Unfortunately, as is the case with a lot of all-in-one combo's, the i70 doesn't particularly excel in any area.

Canon PowerShot A570IS

7MP Price £200
Web www.canon.co.uk

Since the birth of the PowerShot range, Canon has continued to provide its users with something slightly different, from a level of manual control not offered by other compacts to a viewfinder – something which many people don't want to see fall victim to the fashion of digital photography.

In the A570IS, the same 4x optical zoom seen previously remains (35-140mm equivalent), but is now coupled with Optical Image Stabilisation. As in the A560 model, the same 80-1600 ISO range has been included but rather disappointingly so has the 115,000 pixel resolution of the LCD screen. Perhaps this isn't seen as a huge priority as an alternative exists within the viewfinder, but a resolution closer to 200,000 pixels is pretty much standard on similar models.

In control

Handling has always been a key consideration within the range, and while the mode dial seems a little stiff – which is unnecessary as it's embedded within the top plate, and so harder to switch accidentally – the menu pad and additional buttons are better spaced out than on the A560.

But it's in its images where the camera really shines, producing well-exposed 'clean' photos that are both sharp and contain masses of detail. Not only that, but noise is minimal and metering is sound.

Panasonic Lumix FX30

7MP Price £180
Web www.panasonic.co.uk

One of the latest compacts in Panasonic's FX range, the FX30 was marketed upon its release as the world's slimmest digital camera with 28mm wideangle lens. Based around the successful FX01 model, the camera has seen a few improvements with regards to exposure and image processing.

The sensor has been upped to seven megapixels while the 28-100mm lens results in an optical zoom of 3.6x. Mega Optical Image Stabilisation features too, but whereas on previous models where its activation was via a switch on the top panel prior to every shot, it has now has been incorporated into the menu system with the distinct advantage of being kept on continuously. The high sensitivity mode seen on previous models has now been complemented by an Intelligent ISO feature, adjusting the ISO according to conditions present.

Slimmed down

The design deviates little from the previous FX8 and FX9 models with the same fascia at the front and 2.5in LCD screen and menu pad at the rear. The only other notable change is that the camera is a couple of millimetres slimmer.

The Venus III processing engine has helped to improve start-up and focusing times, with both being impressive. The menu system still has the same clear and user-friendly layout with explanations where necessary as to the role of particular functions.

Degrees of shift between the ISO increments is minimal with good colour rendition and a white balance system that does what it should. Fringing is controlled, as is edge softness, though a small amount of barrelling is present at 28mm.

Pentax Optio W30

7MP Price £180
Web www.pentax.co.uk

Pentax's W range sees a new member in the form of the W30, replacing the W20 model, with its main feature being its waterproof and dustproof capabilities.

Key improvements include expanded waterproof functionality, with depths of 3m for up to two hours now possible. The seven-megapixel sensor remains the same but the ISO range has now been stretched a stop to 3200. Anti-shake is provided in the form of Digital Shake Reduction mode, which shifts the ISO to match shooting conditions, and visibility of the 2.5in LCD screen is aided by a Bright View mode The lens itself has also been coated to prevent water droplets from sticking to its surface.

One-track mind

Both start-up and focusing times are good and moving through the zoom range is well-paced. In low light it does tend to dawdle a bit before making its mind up but this is fairly typical and no cause for concern.

It is clear though, that the W30 was designed with one key purpose in mind and this does infringe on both the overall construction and usability in non-aquatic situations. The shutter button in particular is slightly resistant, while the elongated shape of its body does accommodate a well-spaced set of buttons and the 2.5in LCD screen, but this comes at the expense of comfortable handling. Nevertheless, as an uncomplicated holiday-proof camera that can take a little abuse, you should need little else.

AT A GLANCE

Overview

Image quality, specifications, our likes and dislikes, scores and more – you'll find it all here

Canon Ixus 75
Despite some fringing problems, the IXUS 75 puts in a good performance

Olympus FE-250
Accurate exposures and great colour gradation are typical of the FE-250

Samsung i70
Colours from the i70 suffer from too much saturation, with more realistic tones at ISO 200 and above

Canon A570IS
Exposures are 'clean', generally noise-free and contain masses of detail, even in shadow areas

Panasonic Lumix FX30
Fringing and edge-softness are superbly controlled, with noise being barely an issue

Pentax W30
Low ISO's produce good results with nice colour, but images have a tendency to be slightly flat

	Canon Ixus 75	Olympus FE-250	Samsung i70	Canon A570IS	Panasonic Lumix FX30	Pentax Optio W30
PRICE (Street)	£195	£185	£180	£200	£180	£180
RESOLUTION	7MP	8MP	7MP	7MP	7MP	7MP
LENS	F/2.8-4.9 35-105mm	F/2.8-4.7 35-105mm	F/3.5-4.5 38-114mm	F/2.6-5.5 35-140mm	F/2.8-5.6 28-100mm	F/3-3.4 38-114mm
STABILISATION	ISO shift	ISO shift	ISO shift	Lens based	Lens based	ISO shift
EXPOSURE MODES	Auto/Manual 17 Scene	Auto/Program 15 Scene	Auto/Program 11 Scene	Auto/PASM 19 Scene	Auto/Program 20 Scene	Auto/Program 25 Scene
ISO RANGE	80-1600	64-10000* (in 3mp)	80-1000	80-1600	100-3200 (HS)	64-3200
LCD/VIEWFINDER	3in/No	2.5in/No	3in/No	2.5in/Yes	2.5in/No	2.5in/No
MEMORY CARD	SD	xD	SD	SD	SD	SD
FEATURES	16	17	17	17	18	17
DESIGN	17	18	16	17	18	15
PERFORMANCE	18	17	15	18	18	15
IMAGE QUALITY	17	18	16	18	18	17
VALUE	17	17	17	18	18	16
✔ WHAT WE LIKE	Noise control, ISO range, Speed of operation	Size, Simplicity, Image quality at low ISO	Aberration control, Operational speed	Optical Image Stabilisation, Exposure options	OIS, Size, Design, Ease of use	Waterproof, Ease of use, Noise control
✘ WHAT WE DON'T LIKE	Fringing, Small buttons	Noise at high-ISO settings, Navigation issues	Unnecessary extras, Soft images, Handling	Screen resolution, Mode dial	No major upgrade	Average performance, Design
TOTAL	85%	87%	81%	88%	90%	80%

AND FINALLY

Our Verdict

The great thing about these cameras is that they are all different, with some just ticking more boxes than others

For manual control Canon's A570IS is hard to beat, with fantastic picture quality and an above-average zoom range. Olympus has really impressed with its FE-250 model and it would serve as a great camera for general use, being slim, stylish and producing great images. Canon's IXUS 75 falls down in a couple of areas but nevertheless pulls off an impressive performance, while Pentax's W30 has its merits but is only an ideal choice for its main feature. Samsung's i70 seems to do it all but getting a little lost along the way, so it's hats off to Panasonic, whose FX30 boasts ease of use, great noise control and wideangle capabilities which are complemented by its Mega Optical Image Stabilisation to seal the deal as a fantastic compact choice.

ROUND UP

Latest gear put through their paces

Monopods

Smaller than most tripods, monopods can come in handy for impromptu shots

Tested by Phil Harpley

TRIED & TESTED

National Geographic Tundra

£30

The Tundra has a unique design in that the barrel of the leg isn't round but oval. The bizarre thing is that it actually bends specifically towards the two thinnest sizes of the oval, which make you wonder what the benefit of this design really is. On the plus side the monopod does come with a ball and socket head with a quick-release plate, which will save you some money. The quick-release plate isn't the best quality and attaches with a screwdriver or coin to ensure a firm hold of your camera. There are five sections to the Tundra, which also means it folds up smaller than the others – 48cm with the head or 40cm without. This can obviously be a real benefit when travelling, as it will fit easily into your bag.

National Geographic Tundra
Price: £30
Web: shop.nationalgeographic.com

GOOD	BAD
✔ Includes head	✘ Oval design
✔ Folds up small	✘ Attatchment of quick-release plate
✔ Quick-release plate	

82% What Digital Camera

Slik Slim Pod

Even just planting the foot of the Slim Pod on the floor makes it wobble, but this is partly due to the narrow gauge of the barrel. It does come with a head that tilts in one direction, but this is good enough to allow the user to shoot portraits and landscapes. Like all the other monopods on test here there is a wrist strap to make it easier for carrying. The locks on the four sections operate smoothly to secure the height selected. Though the Slik Slim Pod is probably aimed at the compact camera user, it would benefit from an additional section to make it more compact for when travelling.

Slik Slim Pod Price: £25
Web: www.intro2020.co.uk

GOOD	BAD
✔ Size	✘ Stability
✔ Tilt head	
✔ Price	

80% What Digital Camera

£25

Manfrotto 679B

£34

The Manfrotto is the most expensive of the monopods we have selected for this round-up, but in terms of build and quality, you can see what you are paying for. It has the thickest barrel diameter of our selection and showed no bend when pressure was applied. The three segments can be beneficial in that it takes very little time to get it ready, but it does limit the minimum size when carrying folded. There is a comfortable foam grip and strong locks that ensure a stable base for your camera. There is no ball and socket head, so depending on whether you are attaching the monopod to the base of the camera or a lens mount, potentially you will probably double your costs by adding a head, and more if you stick with the Manfrotto brand. Although the 679B is the heaviest monopod tested here, it's also the strongest. It's probably not aimed at those travelling light, but someone with a heavy lens.

Manfrotto 679B Price: £34
Web: www.manfrotto.com

GOOD	BAD
✔ Strength	✘ Weight
✔ Quick assembly	✘ Size folded
	✘ No head

87% What Digital Camera RECOMMENDED

Velbon RUP-40

The RUP-40 has a very similar design to the Manfrotto and Silk 350 monopods, with a matt black body, cushioned foam handle and wrist support. It folds down further than the Slik 350 and reaches just 2cm less when fully extended. The barrel is narrower than the other two, but the clips lock securely and it feels very solid when at its maximum height. There isn't a head, but as with the other two models this is aimed at DSLR users supporting large lenses and heavy camera bodies. It's heavier than the Slik, but only by 60g, so probably wouldn't be noticeable over a day's shooting.

Velbon RUP-40 Price: £30
Web: www.intro2002.co.uk

GOOD
✔ Light
✔ Size
✔ Strength

BAD
✘ No head included

88%
What Digital Camera RECOMMENDED

Slik 350

The 350 is a sturdy monopod but at the same time very light – half the weight of the Manfrotto – which over the course of a day carrying it would be a real advantage. Judging by the girth of the barrel, it is aimed at DSLR users with a heavy lens. The four sections help the 350 fold down to 51cm without a head, which again is an improvement on the Manfrotto. It has a good foam grip – useful if shooting in cold conditions – with the locks easy to open and firm when closed. The 350 has the greatest maximum height of all the monopods tested here, but someone over 6ft tall would still have to bend slightly to use it. One option here is to add a ball and socket head to the monopod to bring it up to a more comfortable working height.

Silk Monopod 350 Price: £30
Web: www.intro2020.co.uk

GOOD
✔ Strength
✔ Size folded
✔ Weight

BAD
✘ No head

89%
What Digital Camera RECOMMENDED

Velbon Ultra Stick 40

The Ultra Stick 40 is made of titanium and is the lightest of the monopods tested. Its main competitors here would be the Slim Pod and the Tundra as it is definitely aimed at the compact/bridge camera market or entry-level DSLR user, due to its size and weight. Where it lacks compared to the other two models is that there is no head, which will be an additional cost, and probably more than the monopod itself. There is a comfortable black foam grip and the barrel is a dull-gold colour. The build quality of the Ultra Stick 40 is probably the lowest on test and the locking pins actually disappeared while testing. Its opening mechanism is tricky and it does not have locks, but tightens against a thread. Several people I gave the monopod to failed to open it to its full extent and if you were in a hurry it wouldn't prove to be the most functional design. The thread at the top has a cap to it, but unfortunately the other points mentioned bring the score down.

Velbon Ultra Stick 40 Price: £25
Web: www.intro2020.co.uk

GOOD
✔ Weight

BAD
✘ Design of sections
✘ Build quality

78%
What Digital Camera

SPECS

NATIONAL GEOGRAPHIC TUNDRA
Price: £30
Max. height: 156cm
Folded length: 48cm
Leg sections: 5
Head: Yes
Weight: 390g

SILK SLIM POD
Price: £24.99
Max. height: 151cm
Folded length: 53cm
Leg sections: 4
Head: Yes
Weight: 290g

MANFROTTO 679B
Price: £34.00
Max. height: 156cm
Folded length: 62cm
Leg sections: 3
Head: No
Weight: 600g

VELBON RUP-40
Price: £29.99
Max. height: 158cm
Folded length: 49cm
Leg sections: 4
Head: No
Weight: 360g

SILK MONOPOD 350
Price: £29.99
Max. height: 160cm
Folded length: 51cm
Leg sections: 4
Head: No
Weight: 300g

VELBON ULTRA STICK 40
Price: £24.99
Max. height: 142cm
Folded length: 42cm
Leg sections: 4
Head: No
Weight: 220g

Fujifilm A800

This latest FinePix is simple yet boasts high-end technology

6MP Price £140
Web www.fujifilm.co.uk
Tested by Jamie Harrison

Fujifilm's A series cameras have been given a technological makeover with the arrival of the A800 and the A610 (reviewed in our July issue).

Previous incarnations of the models have always used third-party CCDs with the traditional square pixel array. Now they incorporate Fuji's own Super CCD HR. The 8.3MP A800 also has Fujifilm's own RP (Real Photo) processor for the first time. Again this technology was only previously available in the higher-end models such as the F series and of course the S5 DSLR.

In other areas, the camera has the simplicity of control we expect from the A range, with easy-to-use Program shooting, various scene modes and limited menus. This is a point-and-shoot camera for the masses, rather than an enthusiast model.

Among the simple features are a reasonably high ISO of 800, which is linked to the camera's 'anti-shake' system. With no optical image stabilisation, the camera automatically raises the ISO to allow faster shutter speeds, and so cancelling the danger of camera shake.

SPECS & SCORES

LENS 36-108mm (3x zoom)
RESOLUTION 8.3MP
ISO 100-800
EXP MODES Prog, Auto, 14 Scene
SIZE 97.5 x 61.9 x 31.0mm
WEIGHT 151g
POWER 2 x AA

FEATURES	16
DESIGN	16
PERFORMANCE	16
IMAGE QUALITY	17
VALUE	17

✔ **WHAT WE LIKE**
Simplicity, Inclusion of Super CCD HR

✘ **WHAT WE DON'T LIKE**
Minor image issues, Digital stabilisation

What Digital Camera **TOTAL 82%**

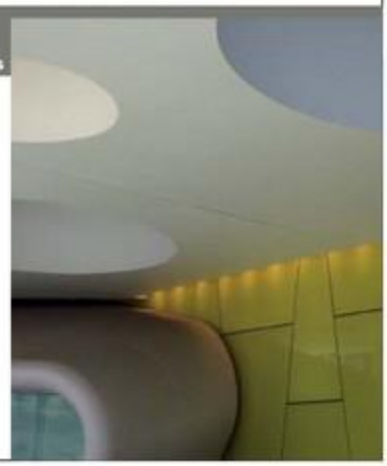
OUR VERDICT

As point-and-shooters go, the A800 should keep all but the most discerning punters happy. Image faults are minimal – especially for the audience aimed at – and are outweighed by the camera's ease of use.

Image quality

www.whatdigitalcamera.com for image samples

Fujifilm has done well placing the 8 million pixels on to the Super CCD HR chip. Images are crisp and punchy, with little noise in the lower reaches of the ISO speeds. There's a bit of fringing in high-contrast areas, especially in the corners, but not enough to upset anyone. Colours are nicely saturated, while even the most tricky subjects are well controlled by the meter. Noise is present in the higher ISO ratings, and there's a touch of JPEG artefacting in some areas.



Nikon L12

The Coolpix L12 is the top of the tree in Nikon's 'lifestyle' range

7MP Price £150
Web www.europe-nikon.com
Tested by Phil Harpley

Nikon's L12 has a 7MP sensor, 3x optical zoom (35-105mm equivalent) and 15 scene modes. Where it starts to get interesting is with an ISO range of 80-1600 and optical image stabilisation.

You can get the L12 for a street price of less than £100, which also weighs in its favour. Quick to start up, its layout is simple and efficient and it has lots of features to help the novice – in fact this would be the perfect first digital camera for my mum. The lens design is different from that of most cameras, as it is not centred in the middle of the zoom barrel, but slightly below centre. Very compact in size, the L12 has a small bump on the right accommodating the AA batteries.

Manual control of the ISO range isn't possible, so images will vary in noise due to the camera selecting a higher sensitivity in dark conditions. The time to write to the memory card can also be slow if you are using the highest-quality settings, but since the camera is unlikely to be used for high-speed work, this isn't too much of an issue.

SPECS & SCORES

LENS 35-105mm (3x zoom)
RESOLUTION 7.1MP
ISO 80-1600
EXP MODES Auto, 15 scene
SIZE 91 x 61 x 26mm
WEIGHT 125g
POWER 2 x AA

FEATURES	17
DESIGN	17
PERFORMANCE	17
IMAGE QUALITY	17
VALUE	18

✔ **WHAT WE LIKE**
ISO range, Vibration Reduction, Design, Muppet-proof

✘ **WHAT WE DON'T LIKE**
Writing speed, No manual ISO adjustment, Noise

What Digital Camera RECOMMENDED **TOTAL 86%**

OUR VERDICT

This is a great camera for someone who doesn't want the hassle of reading manuals, or full manual control. It is intuitive and user friendly and at a very reasonable price.

Image quality

www.whatdigitalcamera.com for image samples

Usually we test how cameras perform at each ISO setting but on the L12 you can't control this as the camera sets it automatically. Fringing is minimal and is not an issue, and while noise is apparent it's noticeable only for prints of A3 size – any size smaller would be fine. The lens does show signs of barrelling at the wideangle end, though it's minimal at the telephoto end. Exposures are consistent and it deals well when subjected to a variety of lighting conditions.

Adobe Lightroom 1.1

Lightroom's update speeds up your workflow – and much more

Price £205 **Web** www.adobe.co.uk
Tested by Jamie Harrison

Lightroom's extensive Beta period produced a piece of software that, for a first release, was pretty much perfect – or so it seemed. But as with most software packages, as users report bugs, the program needs updating to fix those. This first .1 update from Adobe, however, has taken things a little further, with some quite major changes and additions.

The main change is how the interface actually works. The Library module was quite unwieldy, as Lightroom v.1 referenced pictures in folder subsets. That option is still available but Adobe has now added catalogue options. Folders or imported pictures can simply be opened in their own Lightroom window as a Catalog, which can be saved. This really speeds things up, making Lightroom work more like one of my favourite applications, iView Media Pro. Catalogs can be imported, merged and exported too.

Incidentally, in the 'import from card' option, you can automatically eject the disc after import – a small change but typical of the updates in Lightroom that speed up your workflow.

Another new feature in the Library module is the Spray can, which replaces the keyword stamp. This lets you 'spray' multiple images by moving your cursor over images in the library window, and it's not just limited to keywords, but ratings, flags, labels and more, and is a useful tool for quickly tagging or selecting images.

In the Develop module, Adobe has brought in some of the features from the Adobe Camera Raw 4.1 update, including the ability to mask areas so you can sharpen just the edges, for example. Sharpening now works on the Luminance channel, so only sharpens the detail and not the colours. This makes it a better tool all round as, previously, accurate sharpening had to be done in Photoshop.

Another new tool is the Clarity slider, which uses a combination of contrast and sharpening to add crispness to an image, and despite the interface remaining the same, the noise reduction is much better. There are numerous subtle improvements to other areas of the Develop module, including better spotting tools, and the red-eye tool having a makeover.

The Slideshow module now gives smoother transitions, and you can now select images in the library for inclusion in the slideshow, rather than the slideshow showing every picture in the folder.

There have also been changes to the Print and Web sections, including a fast resolution selection tool in the Print module, as well as a print overlay, which displays the image size, and the ability to add borders and drop shadows to web galleries in the Web module.

OUR VERDICT

Usually a .1 update to software wouldn't warrant a review in WDC, but Adobe has thrown the rulebook out of the window ever since it first announced the public beta of Lightroom.

Aside from bugs and minor fixes, this is quite a big overhaul of the original Lightroom software, and tinkering with the program shows more than is highlighted in the update Read Me file. The Catalog system in itself is a big improvement both to workflow, speed and sharing catalogs across a network, while new controls such as the sharpness masking are genuinely useful, well thought through and excuted perfectly.

In short, a great piece of software is now even better, proving to be a fantastic tool for the photographer – and we're still only in version 1...

SCORES

✔ **WHAT WE LIKE**
Catalog system, Updated Print and Web sections, Sharpening tools

✘ **WHAT WE DON'T LIKE**
Not much

What Digital Camera **GOLD AWARD**

TOTAL 91%

Canon 950 IS

Image stabilisation with top-end IXUS

8MP Price £330
Web www.canon.co.uk
Tested by Paul Nuttall

Canon's IXUS range is renowned for coupling stylish design with market-leading feature sets. The new IXUS 950 IS attempts to follow this trend, continued by the recently released IXUS 70 and 75 models.

With an 8MP sensor, the 950 IS gains a megapixel on those two models from the off. A 4x optical zoom (35-140mm equivalent) lens is present, together with optical image stabilisation. The ISO range stretches from 80 to 1600, with a high ISO auto option also offered, alongside a 9-point AiAF face detection autofocus system. Image capturing is controlled through Auto, Manual or 16 scene modes.

The design of the 950 IS maintains the sleek curves and chrome details synonymous with the IXUS range, with the three-tone metallic finish making it an eye-catching model. However, the chassis is somewhat bulgy, and at 165g is by no means light. The viewfinder is so small it's hard to even see through it, however the 2.5in LCD makes the viewfinder more of a selling point than a necessity. Focusing and shooting speeds are impressive, though.

SPECS & SCORES

LENS 35-140mm (4x zoom)
RESOLUTION 8MP
ISO Auto, 80-1600
EXP MODES Auto, M, 16 scene
SIZE 90 x 56 x 26mm
WEIGHT 165g
POWER 2x AA

FEATURES	17
DESIGN	17
PERFORMANCE	18
IMAGE QUALITY	19
VALUE	16

✔ **WHAT WE LIKE**
Excellent image quality, Quick start-up and shooting times

✘ **WHAT WE DON'T LIKE**
High price considering competitors, Heavy

What Digital Camera RECOMMENDED **TOTAL 87%**

OUR VERDICT

The IXUS 950 IS continues the tradition of the IXUS brand in delivering quality, but the price tag is somewhat prohibitive considering it doesn't offer a lot more than the much cheaper IXUS 70 and IXUS 75 models.

Image quality

www.whatdigitalcamera.com for image samples

Images produced by the IXUS 950 IS are impressive on the whole, with first-class metering and white balance systems producing shots that are correctly exposed. Noise is restricted throughout the ISO range with little evidence of fringing, and while images do appear a touch soft on the whole, the overall quality is fine – if not excellent – right up to prints of 8x6in in size. Over this size, luminosity noise starts to creep in but images are still acceptable.

Vivitar 6200w

Waterproof photography on a budget

6MP Price £120
Web www.vivitar.co.uk
Tested by Paul Nuttall

Waterproof photography used to be a specialist area restricted to those willing to pay large sums for unwieldy housings. Vivitar's latest offering is robust, waterproof to 30ft and affordable, but how does it fare both in and out of the water?

As expected with a camera aimed towards underwater photography, the ViviCam 6200w's specification is dominated by its sub-aqua capabilities. The 6MP CCD sensor and 2in LCD are protected by a robust and somewhat 'toy-camera' feel rubber armour, providing a maximum depth of 30ft. The maximum ISO 200 is modest, as is the lack of optical zoom, with a 4x digital zoom being the only zoom option. Image capturing is handled through either Auto or eight scene modes.

The design of the ViviCam 6200w is unquestionably water-orientated, and while serving a purpose when used in the water, the result is a camera that has the feel of a toy model, which makes it clunky outside of the water. It is, however, relatively simple to use, with the large buttons making in-water image capture and review simple.

SPECS & SCORES

LENS 42mm f/3.3
RESOLUTION 6MP
ISO Auto, 50-200
EXP MODES Auto, 8 scene
SIZE 120 x 78 x 43mm
WEIGHT 230g
POWER 2x AA

FEATURES	16
DESIGN	14
PERFORMANCE	15
IMAGE QUALITY	13
VALUE	17

✔ **WHAT WE LIKE**
In-water ability and handling, Affordable for a waterproof compact

✘ **WHAT WE DON'T LIKE**
Bulky, Basic design, Poor image quality, Out-of-water usability

What Digital Camera **TOTAL 75%**

OUR VERDICT

While the ViviCam 6200w provides acceptable results in use in the water at an affordable price, the overall feel of the camera is such that using it any place else is an unpleasant experience.

Image quality

www.whatdigitalcamera.com for image samples

Images are generally acceptable from the Vivicam 6200w, considering the turbulent conditions that shooting in water presents. Exposures have a tendency to be unreliable and vary a lot from shot-to-shot. Evidence of excessive sharpening is present on most images and noise is evident throughout the range (even at ISO 50!). Images can appear soft towards the corners of the frame, with detail regularly manifesting itself as indistinct smudges and smears.

National Geographic Medium Backpack

Price £120
Web www.supporthexperience.com

For those among you with a Ray Mears streak, the National Geographic backpack may be right up your wilderness trail. With looks more suited to the French Foreign Legion, and environmentally friendly materials used such as hemp and cotton, the bag certainly fits the National Geographic image.

There's plenty of space inside for your camera gear – it can easily fit a DSLR body with a lens, a couple of extra lenses and a flashgun too. There's also a pocket at the back for a small laptop. Other essentials such as food and waterproof clothing can be stowed in a top compartment, while accessories and maps will fit into any of the four external pockets. Apparently, there's also a concealed document pocket but I couldn't find it!

A feature I particular like are the cloth side pouches, which can be used for water bottles or large lenses. There are also plenty of straps for attaching camera supports or lens pouches, or even camping gear.

Carriage is quite easy as there's a useful grab handle on the top, and the straps are reasonably comfortable, if a little convoluted thanks to the 'traditional' brass ring system – I prefer easier to use clasps. It's also just a little too 'strappy', though some of the straps can be removed when they're not in use.

The materials used seem strong enough and although the internal padding and dividers aren't the thickest, they all seem secure and safe. This also means the bag's weight and size can be kept down, unlike some bags which are so padded you can barely pack any gear inside!

OUR VERDICT

The backpack offers something a little more unusual, breaking away from current backpack styles. It comfortably holds a ton of gear and is tough and well made. It's also adaptable, so can be used for more than just a camera bag if necessary.

SCORES

✔ **WHAT WE LIKE**
Well-made, Spacious, Side pouches

✘ **WHAT WE DON'T LIKE**
Bit strappy

What Digital Camera RECOMMENDED

TOTAL 85%

Pantone Huey Pro Monitor Calibrator

Price £100 **Web** www.colourconfidence.com

To get the best from your digital photographs it's important to have a correctly calibrated screen. It's impossible to produce accurate colour-corrected images, if the colours on your monitor are inaccurate to start with.

Monitor calibration has become much easier during the past few years, and the Huey Pro has brought it a new level.

The Huey Pro software guides you through the process and calibration takes about five minutes, which is quicker than many systems I've used in the past. The sensor attaches to your screen via gentle suction cups, which are safe for LCD screens, and the pack contains screen wipes to ensure your monitor is clean.

However, the Huey doesn't stop there. We can't all keep our PCs in a perfect environment – a low-lit room, with neutral walls and surfaces – and Pantone has recognised this problem. The Huey Pro actually sits in a cradle, and measures the ambient light as you work, so no matter what time of day or viewing conditions you are working in, your monitor will always look correct. I changed the lighting as I tested the device, from tungsten (low-energy bulbs) to direct sunlight and indirect sunlight. Within moments, the Huey's LEDs started flashing and my monitor adjusted itself back to true colour.

OUR VERDICT

One of the fastest and most useful monitor calibration systems I've seen, and child's play to operate. Highly recommended.

SCORES

✔ **WHAT WE LIKE**
Ambient light control

✘ **WHAT WE DON'T LIKE**
Not much

What Digital Camera GOLD AWARD

TOTAL 91%

BOOK REVIEWS

This month's round-up of photography books

Patterns Of The Earth

Publisher: Phaidon **Price:** £12.95 **By:** Bernard Edmaier

Aerial photographs of the earth have huge appeal at the moment, especially with the current emphasis on its fragility and on the environment. *Patterns of the Earth* is a small-format spin-off from Edmaier's previous coffee table tome *Earthsong*, and features abstract aerial images divided into chapters by pattern type – bands, stripes, ripples, circles, spots, branches and so on. Whether viewed from an environmental standpoint, or simply as abstract art, Edmaier's square-format pictures are simply beautiful. His use of light and his eye for pattern are an inspiration, and even though few of us have the means to take pictures like this ourselves, they certainly spark the urge to go out and look for interesting abstracts to photograph from ground level.

What Digital Camera GOLD AWARD **92%**

Beyond The Camera

Publisher: David & Charles
Price: £25 **By:** Ian Farrell

As its name implies, the main focus of this new hardback is what happens after the picture is taken. Using Adobe Photoshop, Ian Farrell takes the reader on a journey through all the most popular and useful enhancements and corrections, while omitting the more esoteric ones. Unlike guides such as Martin Evening's *Adobe Photoshop for Photographers*, it doesn't attempt to be definitive but what it does cover it does in an easy-to-follow style. Topics include basic exposure and colour enhancements, cloning, retouching, correcting distortion, converting to black and white and printing. Overall, the book proves to be a good introduction to the topic for those who want only the most useful aspects. **84%**

Train Your Gaze

Publisher: AVA
Price: $49.99 **By:** Roswell Angier

Train Your Gaze presents work from a wide body of photographers while also serving as a theoretical guide on the subject and its history. Assignments are given throughout the book, consolidating the methods and techniques of those featured and encouraging readers to apply them to their own images, while the concepts behind their work are considered and analysed. Focusing on both contemporary and household names, the book examines the common perception of portraiture and questions its peripheries, with quotes from the featured photographers. **87%**

What Digital Camera
What to buy... and how to use it

Learning Zone

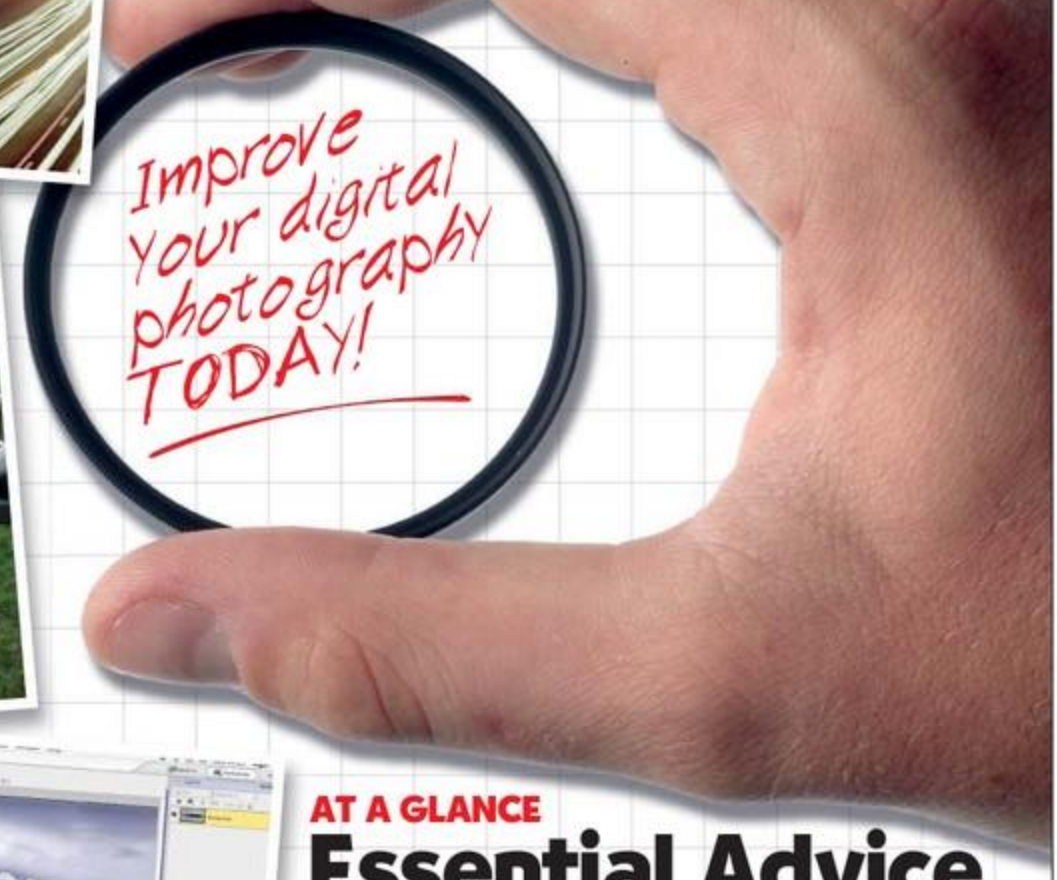
THIS MONTH

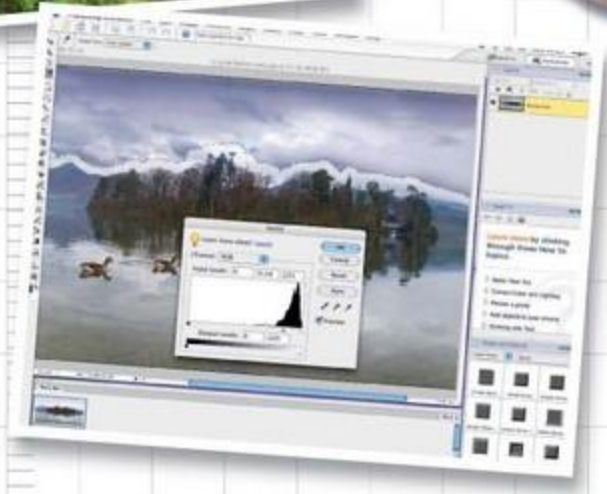
Master Your DSLR p73
Learn all about the joys of shutter speeds

Warm-up Filter p88
In Photoshop, simulate the warm-up filter

Take That p98
Your travel photos: we have a winner

Learn all about shutter speeds, find out which two photo filters you really need and see what Martin Evening thought of your photos





AT A GLANCE
Essential Advice

Master your DSLR - Shutter Speeds	p73
Using Filters	p78
How to simulate an ND grad	p86
How to simulate a warm-up filter	p88
Technique Questions & Answers	p91
Evening Class	p94
Take That - Competition	p98
Photoshop Challenge - Competition	p100

MASTER YOUR DSLR

MASTERING

Shutter Speeds

The choice of shutter speed has a profound effect on the way that moving subjects are recorded. Here's how to get the best out of them

What Digital Camera COVER FEATURE

There are those who say that the only true exposure tool in photography is the shutter. Exposure could be defined as the length of time that film or a digital sensor is exposed to light. The aperture determines how much light is let in during that exposure. Of course, broader photographic theory explains that exposure is a combination of aperture and shutter speed.

So what exactly is the shutter, and what does the term shutter speed mean? The shutter is a gate inside the camera body between the sensor and mirror. It can usually be seen when the lens is detached from the body and the mirror raised.

The shutter consists of a front and rear metal curtain. It's operated by the shutter release button, often lazily referred to as the shutter button or even just the shutter – which can be confusing. When the button is pressed the front curtain begins to move to expose the image, closely followed by the second, or rear curtain in the same direction. This creates a gap, that travels at a constant speed across the sensor to expose the entire frame. Shutter speed refers to the amount of time the shutter is open, between the first and second curtain, thus exposing the image. Typically these speeds are very short- fractions of a second, and hence they are expressed as fractions- such as 1/60 sec, 1/500sec and so on. Occasionally you may need to make longer exposures of several seconds, or even minutes. The smaller the fraction, the shorter the exposure and vice versa. So for a 1 second exposure, the first curtain opens fully and a second later the second curtain follows it to close the shutter.

Just like the aperture, each 'stop' between shutter speeds - selected via an on-camera dial – doubles or halves the exposure, so 1/125sec is half the time of 1/60sec, reducing the exposure by 1EV (Exposure Value) or one stop; while 1/30sec is double the time of 1/60sec so increases the exposure by 1EV or 1 stop. Modern cameras also have half or third stop increments, ensuring more accurate exposure.

The length of time the shutter remains open has an effect on the image. Short (or fast) shutter speeds stop action mid-track, while long (or slow) shutter speeds may blur any movement.

SHUTTER SPEEDS AND LENSES

The focal length of the lens you're using is important in determining the shutter speed you use, in order to avoid camera shake. Camera shake is a motion blur effect caused by a combination of camera movement and slow shutter speed. Whenever we hand hold a camera simply pressing the shutter can cause camera shake. It can also be affected by the length and weight of lens.

As a rule of thumb, the slowest shutter speed you can use will have a denominator roughly the same as that of the lens focal length. In digital terms, the 35mm film equivalent focal length should be used. So a 50mm lens, with a 35mm equivalent focal length of 75mm (approximately 1.5x magnification), requires a shutter speed of 1/75sec or faster. For most users this will equate to around 1/60 to 1/125sec, depending on how many coffees you've had. That may sound like a joke, but in fact caffeine and other stimulants can have an effect on camera shake. Camera shake can be avoided by using a support such as a tripod, or even resting your body against a wall, or raising the cameras ISO or opening the aperture. Alternatively there are lenses with Image Stabilisation.

SHUTTER RELEASE BUTTON
Aside from operating the shutter mechanism, this button also activates the cameras focus, metering and white balance.
OFF ON
MODE DIAL
The best mode to choose is Shutter Priority AE, marked as S or TV (for Time Value). Alternatively Manual (M) allows control of both shutter speed and aperture.
COMMAND DIAL
Situated at the back or near the shutter release button, the command dial can be used to choose the speed we wish to use.
LCD SCREEN
Amongst the information displayed on the screen is the shutter speed. Usually only the denominator figure is shown, ie 125=1/125sec

SLOW SHUTTER SPEEDS

Long, or slow, shutter speeds can be used to tremendous effect, but you will need to hold the camera steady. A couple of ways of doing this is by using a tripod (preferable) or merely placing the camera on a table and changing the angle by raising the lens angle of viewpoint with books, ashtrays or whatever is to hand. A tripod or monopod (see p66) is the best bet.

Most people have seen pictures of waterfalls with blurred water or Piccadilly Circus with car trails. These pictures are easy to take using a combination of small apertures and long shutter speeds of 1 second or more, with DSLRs usually offering a range up to 30 seconds.

The best mode to shoot these types of pictures is Shutter Priority AE (S on most cameras, or Tv on Canon cameras), which allows you to set the shutter speed, while the camera decides the appropriate aperture.

If there are a lot of highlights in the shot, eg, the neon signs of Piccadilly, then make sure to meter carefully. If in doubt, take several shots at different apertures, otherwise known as bracketing.

FAST SHUTTER SPEEDS

The reciprocal effect of aperture and shutter means that as you open the aperture, the shutter time gets shorter, or the 'speed' becomes 'faster'. For average, everyday shooting with standard zooms a speed over 1/60 to 1/125sec will prevent camera shake, and for everyday situations, the upward speeds from there generally have little effect on your pictures. However, as the shutter speed goes past 1/500sec, you can really start to take advantage of the faster shutter speeds' ability to 'freeze' action. Entry level to mid level DSLRs offer a maximum shutter speed of about 1/4000sec, while the Pro cameras such as the Nikon D2X offer speeds as high as 1/8000sec. For high-speed photography this is really useful, as well as sports photography where you really need to catch the detail of Lewis Hamilton's McLaren. Of course this also requires either wide apertures, bright lighting conditions or an adjustment to the cameras ISO speed- or a combination of all three to make using these speeds possible.

THE 'B' SETTING

There may be times when 30 seconds isn't long enough, and you need to keep the shutter open for several minutes. Especially if you're a fan of night-time photography. Many DSLRs have a setting called Bulb, or B, which will keep the shutter open for as long as you keep your finger pressed on the shutter release button. The term originally came, it's believed, from the old Bulb type cable releases- which squeezed a shot of air down a tube to the shutter release button to press it. With modern cameras, a cable release of some description is still recommended as even on a tripod you could move the camera during the long exposure if you were to handle it directly.

IMAGE NOISE

Long exposures on film are susceptible to a problem called reciprocity failure, where the 1-stop aperture/shutter reciprocal relationship ceases to work after a certain slow shutter speed. This would lead to colour casts and under-exposure. Digital cameras don't have this problem, but longer exposures can increase the signal to noise ratio in one or more of the colour channels, causing unpleasant artefacts. Most DSLRs have a built in long exposure Noise Reduction filter hidden somewhere in the menu, which usually adds a small amount of blur to the offending channel. The amount is usually set by the camera manufacturer, though some people prefer to use PC based noise reduction software for more controllable results. The reason for this is that the blur added by the camera's system can sometimes affect the overall image sharpness.

ND FILTERS

There may be times when the light is so bright, that even with the smallest aperture, you can't extend the shutter to the time you need to get the effect you require. In this case a Neutral Density filter can be used. Essentially, an ND filter is like sunglasses for your lens- a piece of darkened glass or gelatin is placed over the lens and reduces the amount of light entering the lens. ND filters are available over a wide range of densities, up to 8 stops. The filters can usually be doubled to increase the effect.

Neutral Density filters will affect the brightness of the viewfinder, so you may have to compose and focus before you place the filter over your lens, especially with higher density filters.

SHUTTER SPEEDS AND MOTION

This sequence shows how the shutter speed that you choose affects the way that moving subjects are recorded by the camera. Remember though that the precise effect will depend on various factors, including the speed of the subject.

For everyday subjects faster shutter speeds have little effect on the pictures look, while 1/500sec

PANNING

One of the most common shutter techniques is that of panning. If you are shooting a racing car, for example, and press the shutter, using a fast shutter speed of 1/1000sec at the moment the car passes the camera, you will get a frozen, motionless-looking car in front of pin sharp background. Alternatively with a slower shutter speed of 1/60sec, you will get a blurred car as it travels too fast to record on the sensor.

Panning involves following the car with the camera and pressing the shutter release button at the same time, so the car will be sharp but the movement of the camera will blur the background. This takes some practice-especially with fast moving subject such as motor sports,

FLASH & SHUTTER SPEEDS

Camera pecifications will often quote an X- sync speed. This is the fastest shutter speed possible with which a flashgun will work. The sync speed is typically set at around 1/60 to 1/250sec, although higher speeds can be used be used with dedicated hi-speed flash units.

The X-sync shutter speed is determined as the point when the shutter is fully open and the camera sends a charge to the flash to fire. The burst from a flashgun is typically much shorter than the time the shutter is open, but there is an optimal point when the shutter is fully open. If the shutter speed is too fast for the flash, the image will not be fully exposed to the flash burst and areas of the image will receive no light, so black lines appear in the final image. Slower shutter speeds can be used to exploit the ambient or background light.

IMAGE STABILISATION

This is explained fully in our main feature on page 30, but essentially IS allows slower than formerly accepted shutter speeds to be used. Camera movement is counteracted by either the optical array or CCD moving in the opposite direction.

DON'T MISS NEXT MONTH We look at ISO, how it affects your images and what it allows you to do

Why not subscribe to be sure of getting your copy? See page 68 for details on how to subscribe

CAMERA SKILLS

Helping you to take better photographs

YOUR GUIDE TO Essential Filters for Landscapes

What Digital Camera COVER FEATURE

There are two filters that every landscape photographer really should have in their gadget bag. Step forward the polariser and ND grad filters...

With many filter effects easily mimicked on the computer and using in-camera controls such as white balance, the question suggests itself; do we really need filters any more? And if so, which filters should we make space for in our kit bags?

Filters can be loosely divided into coloured (chromatic) and others such as polarisers and neutral density graduated filters that modify the light. Most of the coloured ones can be replicated, with more control, in post-processing, so you really only need to use them if you wish to go straight from camera to print. Even then, your camera's white balance can replace some of them.

Polarisers and grads on the other hand are still as important to the creation of great landscapes as ever.

TYPES OF FILTER

Round or square, glass or resin – filters come in differing forms. Glass versions are round and cater specifically for a set lens diameter, with the better ones being coated. Coatings improve light transmission and reduce reflections which can cause flare. Single coatings lose typically 3% of the light transmitted through them; multi coatings reduce this to about 0.5%, whereas multi-resistant coatings (B+W terminology) also protect the filter from scratches and are water and dirt repellent. While step up/down adaptor rings can be used to attach round filters to smaller or larger diameter lenses (preferably smaller lenses to avoid vignetting), they're not as universally compatible as square resin ones. It's debatable whether there's any difference in quality between modern resin filters and glass ones. Indeed many pro landscape photographers swear by Lee (resin) filters. Arguably the most important factor related to a resin filter's quality is its condition. Being made of softer material they're more easily scratched, which can reduce detail.

Nevertheless, the advantages of resin filters are their cheaper price and flexibility. Using inexpensive adaptor rings and a holder it's easy to fit a filter(s) to most lenses. Cokin currently produces four systems to cater for most conceivable diameters: the A Series, P Series, Z-pro Series and the X-pro Series. When deciding on a system, it's important that the filter covers the lens without causing vignetting. The P Series, for example, will only cope with lenses as wide as 14mm before vignetting becomes apparent (when used with APS-C sized sensors).

Polarisers

The most essential filter of them all

If you only ever buy one filter for your camera, make it a polariser. This is the one filter that has yet to be replicated digitally, and is just as useful now as it has ever been.

With the help of a polariser, pale blue skies can become saturated almost to an inky black, obscuring glare can often be removed completely from water and other shiny surfaces, and it's also an effective neutral density filter, absorbing around two stops of light – ideal when longer shutter speeds are needed.

HOW DO THEY WORK?

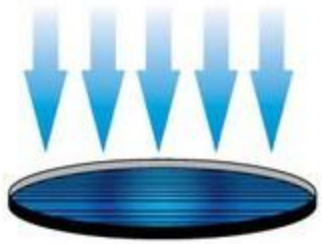
Essentially a polariser is much like an incredibly fine sieve – one which allows only light vibrating in a certain direction to pass through. All of the filter's incredible abilities stem from this one property.

Most light in nature is unpolarised, meaning that as it travels in a straight path it does so as a wave which undulates or vibrates in all directions. However, if it should meet a shiny surface (apart from those of metals and mirrors) some of this light can be reflected in a set orientation becoming 'polarised'. Through its unique filtering action, a polariser can be rotated to selectively block this light, which in turn reveals the reflecting surface's natural colour and detail.

Another popular use of polarisers is to darken or enrich a blue sky. This is possible because polarised rays exist naturally in the heavens where the light reflects from suspended particles. The effect is strongest at ninety degrees to the sun. There's a useful and equipment-free method for finding this zone. Point your forefinger at the sun and raise your thumb as if it's the hammer of a gun. Now, rotate your wrist right and left so that your thumb has marked out a complete hemisphere from horizon to horizon. This is the area in which the polariser will have most effect. Nearer to the sun, changes will dwindle to nothing; similarly, with the sun at your back the effect will be just as mild.

LINEAR VERSUS CIRCULAR

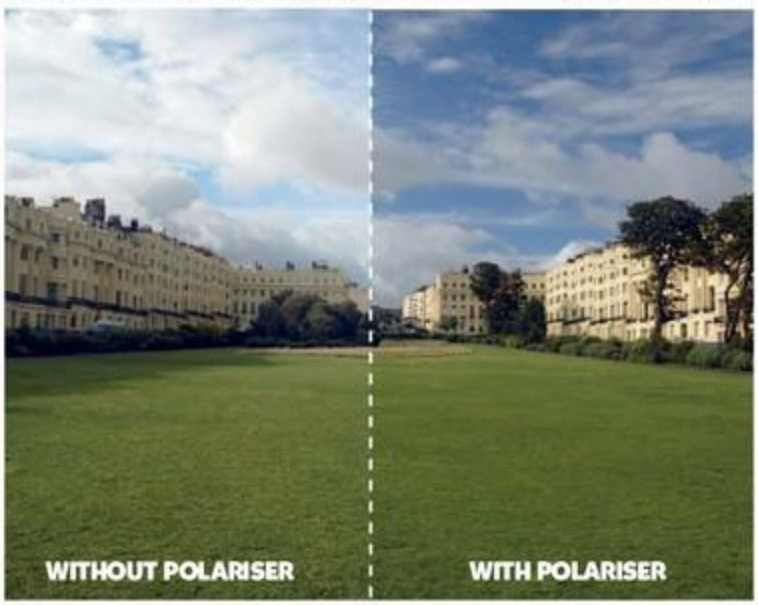
There are two types of polarising filter. Both have similar effects on the image, but linear polarisers work best with manual focus cameras and hand-held light meters. If attached to a modern DSLR they're likely to confuse the autofocus sensors and internal light metering systems as they cause the light that these sensitive mechanisms depend upon to vary. A better solution with DSLRs is a circular polariser. Through clever construction these filters restore the light inside the camera, allowing correct metering and accurate autofocusing to take place. Interestingly, some photographers still prefer to use linear polarisers, despite their drawbacks, as they believe that they simply do a better job.

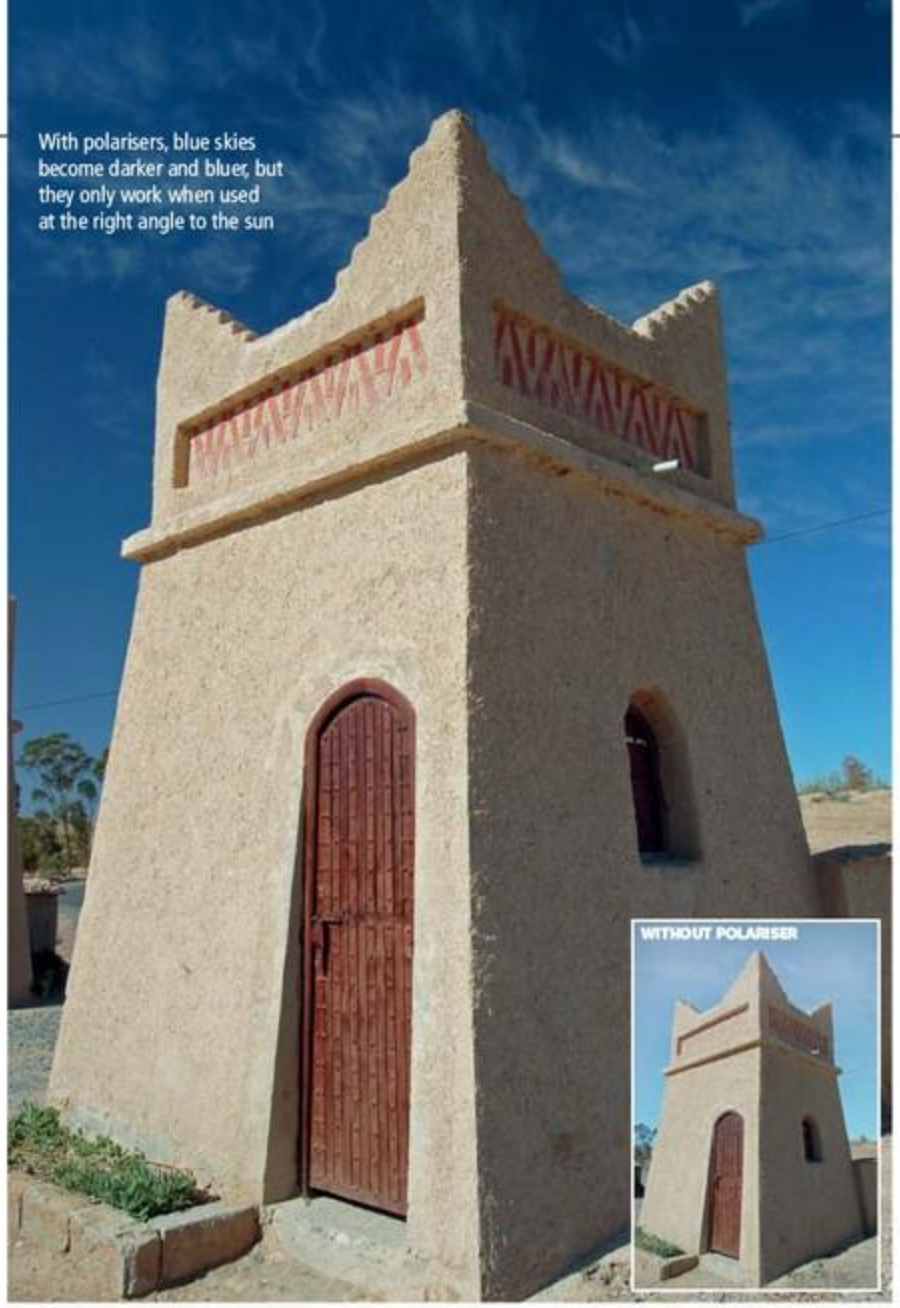


An unpolarised ray of light encounters a polariser – only those waveforms aligned with the filter's structure will be allowed to pass.

Polarisers in Action

These pictures illustrate the benefits of using a polariser. See how in the main image (below) the sky has been made bluer and the grass greener. The yellow of the cafe is intensified, but the biggest change is in the car. By reducing reflections on the bodywork the red paintwork becomes richer and you can see more clearly through the windscreen.





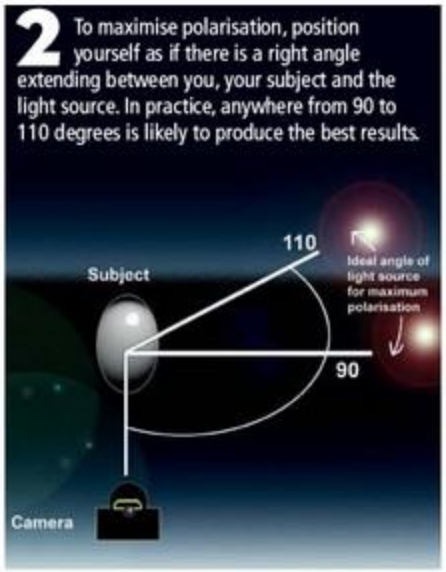
With polarisers, blue skies become darker and bluer, but they only work when used at the right angle to the sun

TIPS FOR USING POLARISERS

With a two-stop light-absorbing factor, you may want to compose your scene first and then add the polariser at a later point. If you are using a combination of filters, the polariser should always be furthest from the lens, so that it can't alter the light from the other filters.

Consider using a tripod too – this will not only guard against camera shake, but also free up your hands to allow you to rotate the filter easier. To avoid frustration, lenses with front elements that rotate during focusing have to be used manually to keep the filter in the same position.

2 To maximise polarisation, position yourself as if there is a right angle extending between you, your subject and the light source. In practice, anywhere from 90 to 110 degrees is likely to produce the best results.



3 While viewing, rotate the filter slowly. Keep an eye out for changes that occur in reflections and with colour saturation.

4 Exposure is best calculated using the camera's TTL meter as it will take into account changes made by the filter. You can also use a hand-held meter and then deduct the filter's light-absorbing factor (about 2 stops).

5 After shooting, review the image on your LCD screen. If the effect is too strong or too weak, rotate the filter and take another shot.

BUYING FILTERS

What to buy and how much

POLARISERS

These are the major brands of polarising filter, along with the average price of a 62mm circular polariser from each brand.

HOYA

The world's top filter brands Hoya's Pro-1 Digital Filters are designed for DSLRs. *Sample Price: £95 (Hoya Pro 1-D, 62mm)*

SIGMA

Lens maker Sigma's EX DG filters are specially designed for DSLRs. *Sample Price: £70 (Sigma EX DG, 62mm)*

B&W

Premium German brand B&W offers ultimate quality, but they aren't cheap. *Sample Price: £100*

COKIN

Cokin's polarisers slot into their various mount systems rather than screw onto the lens itself. There are three available: *Sample Prices: £60 (to fit P series holder); £200 (X series); £220 (Z series)*

TIFFEN

US brand big in the movie industry. *Sample Prices: £40 (for P series holder);*

ND GRADS

These are the major brands of square resin filters, along with the average price of an ND grad from each brand.

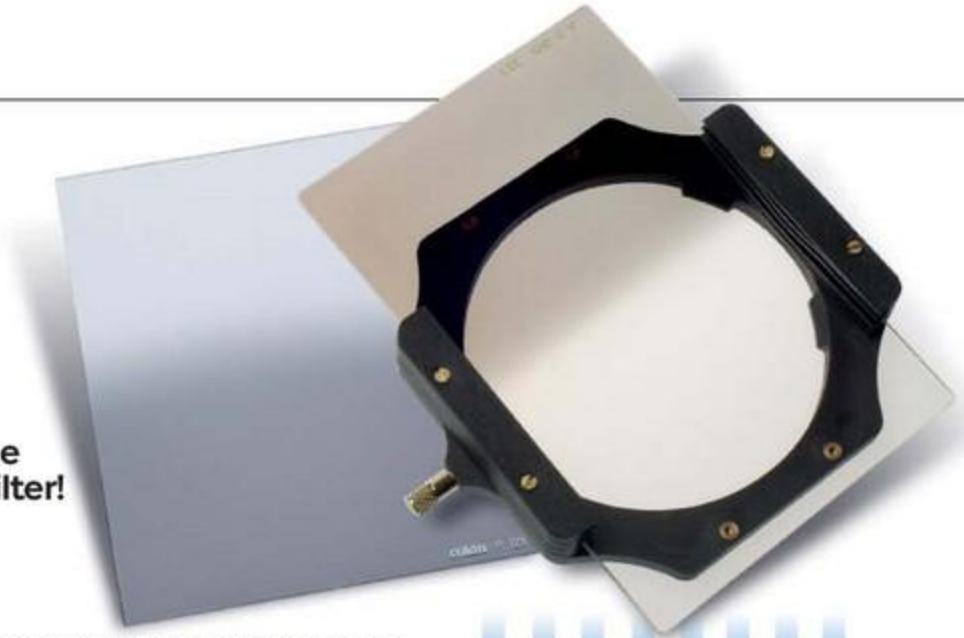
COKIN

Cokin refers to its ND grads as 'grey'. Again they come in three sizes. *Sample Prices: £15 (P series) £50 (X/Z series)*

LEE

The premium brand when it comes to square resin filters, Lee is the choice of most professionals. They produce a vast range of ND grad variations. *Sample Prices: £60 (single filters) £133 (for a set of three)*

ND Grads



Sky too light? Then turn to the dark side – of your ND Grad filter!

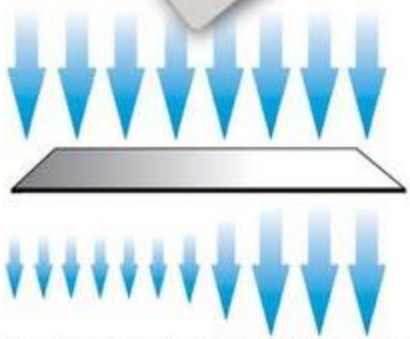
Except at night or on the odd thundery occasion, the sky is almost always brighter than the land. At certain times of day, often when the sun is low, the difference can go way beyond what a single exposure is able to capture, and there are other instances too when the sky is overcast and filled with highly reflective and featureless cloud. In both these circumstances you can make a big difference to your results by reaching for that other essential landscape photographers filter – the neutral density graduated filter (or 'ND grad', for short).

HOW DO THEY WORK?

Grads are half clear and half covered with a light-blocking tint. As the name implies, this is distributed in subtly decreasing density from the top to the middle, where it becomes clear. Neutral density grads are similar to polarisers in that they block light, but do not introduce colour. Coloured grads, on the other hand, change the picture's hues as well as blocking light. (These can also be useful in some circumstances, to enhance a scene, but are often misused). It's also possible to obtain something called a 'grey grad'. These are hypothetically ND grads but may not be guaranteed to be free of slight colour casts. ND grads work by reducing the light entering the lens from one half of the frame, in order to balance its brightness level with the other half. Most often this is the sky, but with some creative thought, ND grads can be handy for many other situations of high contrast too.

GRAD VARIETIES

Because skies vary in brightness, ND grads come in differing strengths. A factor of x2 blocks one stop of light, x4 blocks two and x8 blocks three. (Some brands, such as Lee, call them 0.3, 0.6 and 0.9.) You can also combine filters for stronger effects or top-and-tail two different strength filters. Lee filters go one stage further by offering the photographer control over the area of transition on the filter. ND grads termed 'soft' have a gentle area of gradation in their middle, while those termed 'hard' go from clear to dark quite abruptly.



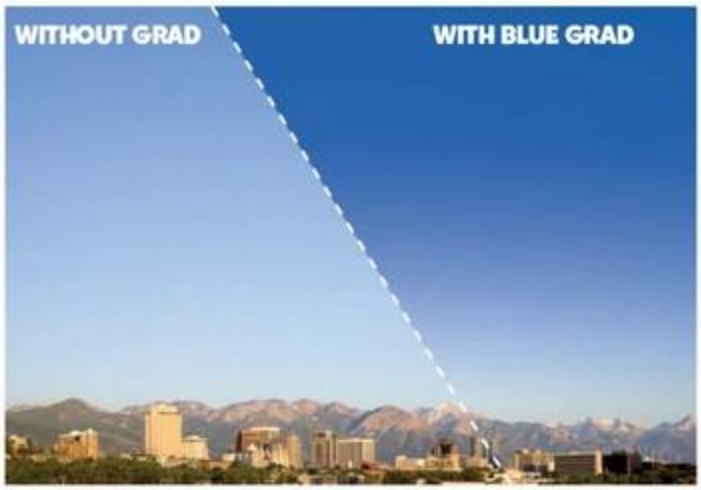
Above: This diagram illustrates the light-blocking attributes of the ND grad. The tinted half blocks some of the light

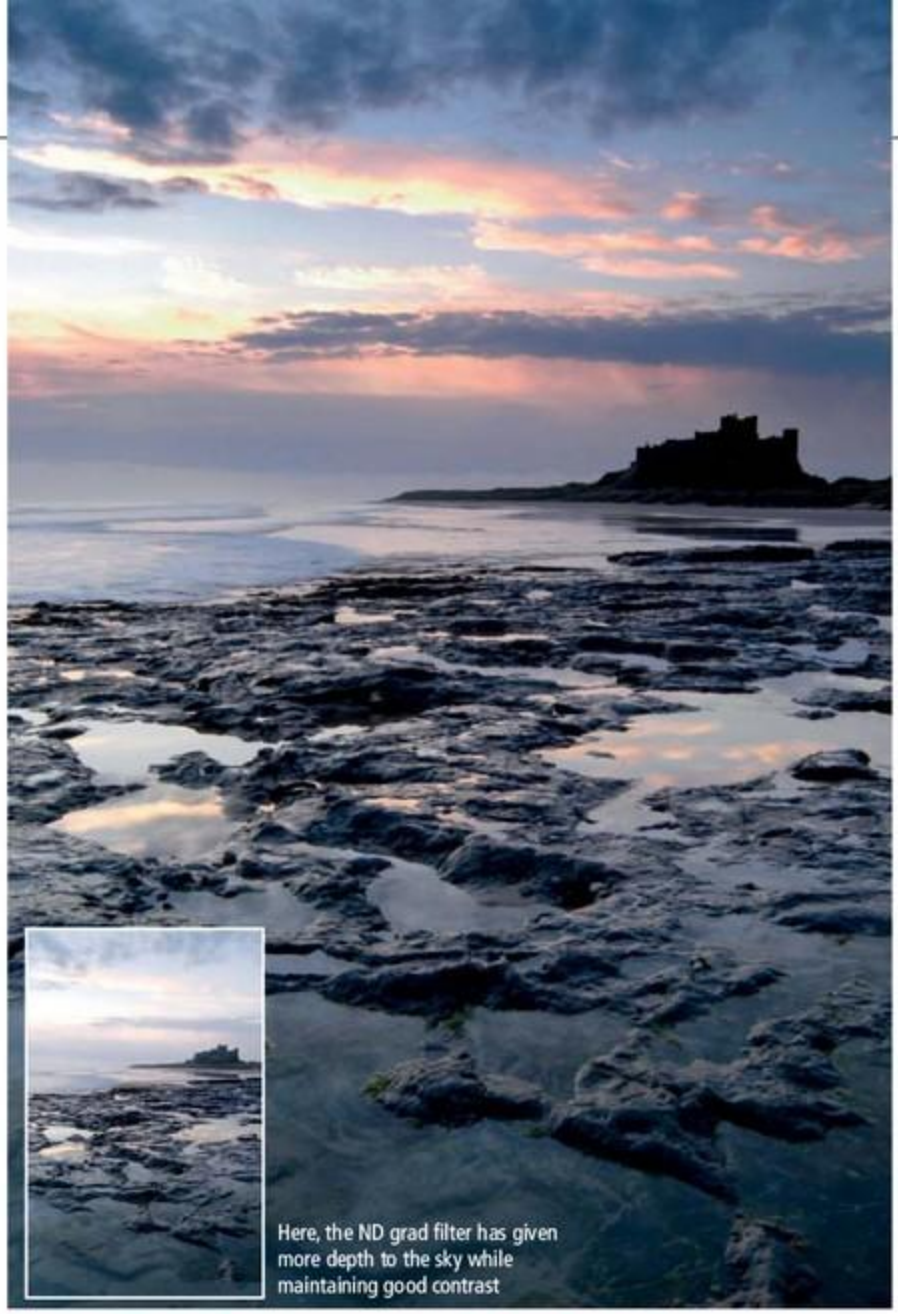
APERTURE CONSIDERATIONS

The lens aperture also has implications as to the sort of gradation that you are likely to receive. Small f-stops such as f/22 make the zone of transition more abrupt. This is particularly the case with wideangle lenses. Surprisingly, using a softly graduated filter you may find little actual difference between an image shot using f/4 and one of f/22.

Grads in Action

Neutral Density grads are useful for retaining detail in a pale sky that would otherwise be burnt out by over-exposure. They can also make a blue sky darker. Grad filters can also come in other colours to add a tint to one half of the image (usually the sky). Also, neutral density filters come in solid, ungraduated form too, to reduce exposure evenly across the frame (for when you need to use longer shutter speeds).





Here, the ND grad filter has given more depth to the sky while maintaining good contrast

TIPS FOR USING GRADS

1 Initially, leave the filter off and set your camera to manual mode. Compose your image and then use the meter to determine the exposure of the darker half of the scene (usually the land), metering from a mid-tone.

2 Staying with your chosen aperture, take an average reading from the area of sky that will feature in your photo. To reduce contrast, exclude the sun or limit its impact by positioning it behind an object.

3 It's likely you'll have recorded two quite different shutter speeds: one for the sky and a longer one for the land. To create a well-balanced image, both figures ideally need be similar. Work out how many stops difference there is between your two speeds e.g. 1/60th to 1/125th is one stop; 1/60th to 1/250th is two etc. If the shortfall is one stop then you need to use a x2 ND grad, two stops: a x4, and three stops: a x8.

4 If your lens is of the type whose front element rotates during focusing, you should focus first before attaching the filter, then switch to manual focusing to stop it from moving. Insert the filter into the holder and, looking through the viewfinder, carefully slide the filter up or down until the graduated portion covers the sky, but doesn't darken the land. If your camera is equipped with a depth of field preview button, you can use it to get a better idea of where the zone of gradation comes into play.

5 Now dial in your previously deduced exposure settings. Remember: this was the exposure for the darker portion of the scene – the ND grad will take care of the lighter half. Check the frame for flare, shading the lens with your hand if you find any, and take the shot.

UV Filters

Also worth considering...

Ultraviolet light is outside of the visible spectrum, just as infrared is, but can be recorded by film and digital sensors as bluish strong cast – especially as you gain altitude. UV radiation is also responsible for the haze that forms in distant views as it scatters off air molecules, water droplets and pollution. Using a UV filter can remove the unwanted colour and cut down on haze, thus restoring contrast. A skylight filter possesses equal talents to a UV, but absorbs a small amount of green and blue visible light too which makes for a slightly pink warming effect.

Digital camera sensors aren't very receptive to UV light; in fact they're much more sensitive to infrared radiation and consequently contain a filter to block it. Most good lenses also absorb a fair portion of the UV spectrum – and a lot are coated to filter UV out – so the question is, are UV and skylight filters of any use with digital cameras?

Well, it's never a bad idea to remove UV light from your images, but skylight and UV filters are perhaps a greater asset when viewed as lens protectors.

PROS:

- They keep dust away from the lens's front element, meaning it does not need cleaning as frequently.
- If scratched, a filter can be replaced inexpensively, while the lens cannot.
- When teamed with a lens cap there is great environmental protection from spray and other wind-borne particles.

CONS:

- As an extra surface in front of your lens flare may be encouraged – therefore a lens hood is always a good idea.
- Image quality is better without the filter, with cheaper models degrading quality even more.
- If a lens is handled carefully and the cap replaced regularly – UV and skylight filters may be an unnecessary expense.

Admittedly it's a contentious issue and while some photographers wouldn't dream of using a UV or skylight filter, there are many others who wouldn't be without the protection they provide. As with most things in life, the best advice is to test things out to your own satisfaction.

Thanks to Mayfield Lavender in Banstead, Surrey for allowing us access to their harvest. Photographers are welcome to attend during opening times; details are available at www.mayfieldlavender.com

PHOTO EDITING

HOW TO SIMULATE

ND Grad Filter

Don't have an ND grad filter? Here's a way to get more detail into your skies using Elements

SOFTWARE: Photoshop Elements 5.0
LEARN: Magic Wand selection, Levels adjustments, Shadow & Highlight control
TIME: 30mins

Sometimes the contrast range between the sky and the landscape is so great it's impossible to get a good exposure for both, and in these cases it's usually the sky (the less important element) that loses out, resulting in a washed-out image.

In an ideal world a Neutral Density Grad filter should be used on the camera to balance the exposure by darkening the sky (see page 78).

But what if you don't own any grads, or you happen to enjoy spending quality time on the PC? Well you won't be surprised to hear that you can replicate the effect of the ND grad using your favourite editing program.

Adding a graduated grey gradient layer over the image is perhaps the obvious approach, but this tends to look less realistic than the method we're going to use here. There's a caveat though: there does need to be some detail in the sky to work with. If your sky is so overexposed that your highlights are blown then there isn't a realistic way to recover these, and you'd be better off pasting in a sky from a different image – ideally one taken in the same conditions.

So it pays to take a bit of extra care at the shooting stage. Check your histogram after you've taken a shot. If the highlight peak to the right of the graph is cut off by the edge of the histogram you've probably lost some detail, so its best to reshoot at a slightly reduced exposure (a faster shutter speed or smaller aperture). If in doubt, bracket: take one at the metered reading plus a couple of others at different settings. Even better, shoot in Raw mode, as Raw files have a greater exposure latitude. The image can then be adjusted using the Raw processor in Photoshop or Elements, or by using a specialist Raw app such as Lightroom, Capture One or Bibble.

NIGEL EXPLAINS

Confused about the terminology? Allow Nigel to shed some light...

Contrast Range

The human eye is capable of registering detail in a far greater contrast range than any camera or film. We can simultaneously pick out the individual grains of sand on a sunlit beach, and the blades of grass in the deepest shade, but this extreme brightness range is too great for any camera. To get an average exposure, the detail in one or other will have to be sacrificed. Pale skies are a classic case of this problem. While we may be able to see the textures and cloud formations, this could be lost in the final image if the exposure is based upon the grass and trees below. This is why human intervention is often necessary to compensate.

1 First, select the sky. There are many ways to do this, but here we've used the Magic wand. You may need to hold the shift key down and click on multiple parts of the sky to get it all (or increase the tolerance setting). We then shrank the selected area (**Select > Modify > Contract**) by 50 pixels, causing the marching ants to retreat to about a centimetre above the tree line to maintain some separation between the tree line and the storm clouds.

2 Next, we feathered the selection (**Select > Feather**) by 50 pixels. Feathering ensures that the graduation between the selected and unselected areas is not sudden but gradual. The higher the number the more gradual the transition, though the precise effect achieved at a given figure will depend on the resolution of the image. The key is to experiment: if your transition is too sharp or too indistinct go back and set a higher one.

3 Go to **Enhance > Adjust Lighting > Levels**). You'll see that the peak is bunched over the right of the histogram. Click on the central of the three triangular markers under the histogram and slide it to the right, so it's beneath the peak. You should see the sky darken. If the edge of the darkened area looks sharp, as above, you've forgotten to feather the selection first (or have set an inadequate amount). You shouldn't be able to see the 'join', as in the main image.

4 Another way to darken the sky is to use the Shadows/Highlights control. This can be done with or without making a selection first. If you make a selection, follow steps one and two. You'll find the control at **Enhance > Adjust Lighting > Shadows/Highlights**. Leave the Shadows slider set at zero, but move the Highlights slider until the sky darkens as desired. This control should be used with moderation though, as it looks unnatural much above 20.

ALTERNATIVES

Darkening the sky using Adobe Lightroom

Lightroom doesn't allow for selective enhancements but there are a couple of global adjustments that can help with washed-out skies. *• In the Develop module go to the Basic palette. You'll see a slider called Recovery. This is designed to restore lost highlight detail. • Move the slider to the right as required.*

Just below the Basic palette is the Tone Curve. *• You'll see a diagonal line on a graph going from bottom left to top right. • Click on this line near the top and drag it downwards and to the right and observe how this affects sky in the image. • This method does require some practice to master but offers a lot of fine control once you get the hang of it.*

PHOTO EDITING

SIMULATING THE

Warm Up Filter

If you don't have a warm-up filter, here's a way to get more warmth into your images using Elements

SOFTWARE: Photoshop/Elements 5.0
LEARN: Colour Enhancement
TIME: 5 mins

Many of the filters that film photographers would consider essential have now been made superfluous with the arrival of digital technology. Nowhere is this better demonstrated than in the demise of filters designed to tweak, or completely alter the colour temperature of the light entering the lens. The Blue 80A for example, reduces the orange cast produced by tungsten lighting when using daylight-balanced film, while the Orange 85 range enables photographers to use tungsten film in daylight without getting blue pictures.

One of the most useful coloured filters is the 81 series warm-up, which just adds a hint of warmth to compensate for the often cool results you'd get from shooting in the shade, in hazy conditions, or cool winter light. Even in average daylight, the warm-up filter, which comes in three strengths, is good for making the world seem a bit sunnier and more romantic.

Now, of course, photographers can just adjust the white balance on the camera to suit the conditions, and even shoot at a pre-selected colour temperature setting for their own warm-up effect. There's also an infinite variety of colour adjustment possible on a computer.

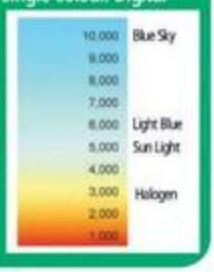
But ignore that crudely basic colour balance control; both Photoshop and Elements feature a set of 'Photo Filters' enabling you to simulate the effect of these filters on your images. You can swap filters and adjust the strength as required, and if you shoot in Raw you can alternatively adjust the white balance on your computer. Adobe Lightroom, for example, has a set of white balance presets as well as a colour temperature slider for precise control. Here's a quick tutorial on using the Photo Filters feature.

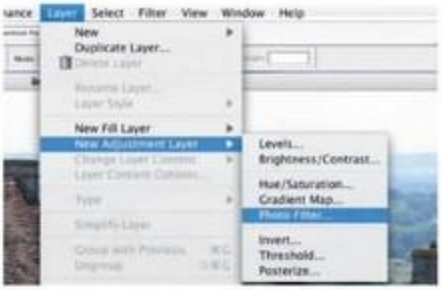
NIGEL EXPLAINS

Confused about the terminology? Allow Nigel to shed some light...

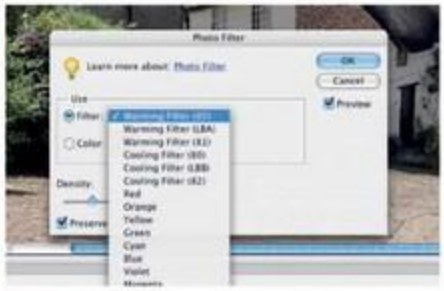
Colour Temperature

Colour correction filters were invented because light comes in many different colours and shades (though our eyes barely register these variations) and film is optimised for a single colour. Digital cameras solve this by incorporating a white balance control which, in auto mode, adjusts automatically for the colour of the prevailing light. There's also a selection of manual presets, plus the ability to select a specific colour temperature from the Kelvin scale (right).





1 In Photoshop Elements you can find the Photo Filters by going to **Filters > Adjustments > Photo Filters**. In Photoshop it's in the Image menu, under Adjustments. But rather than applying the filter effect to the image itself it's far better to do this using an Adjustment Layer. In both Elements and Photoshop go to **Layer > New Adjustment Layer > Photo Filter**. After you've given the layer a name you'll get the Photo Filter dialogue.



2 The Photo Filter dialogue contains two buttons to select 'Filter' or 'Colour'. Make sure it's set on Filter. The drop-down menu lists a range of preset filters and colours. The 85 and 80 filters are strong filters for when the wrong colour balance was set (though they don't work that well for this purpose). The colour filters in the bottom half of the list can also produce some interesting tints, but in this instance we're selecting the classic warming filter (81).

3 Real warm-up filters come in three strengths, A, B and C, with A being the most subtle – and most popular. There's no A, B or C here, but instead we have a slider which offers far more precise control over the intensity of the colour effect (and enables you to go back and tweak it later if you change your mind). Make sure the Preview boxed is ticked so you can see the effect in real time, and the Luminosity box so the filter doesn't darken the image.

4 Finally, adjust the slider until you achieve the effect you want. It's best not to go mad – we chose a density of 30 for this image of Gold Hill in Shaftsbury, to give it just the right amount of that warm Hovis ad nostalgia. If the standard filters and colours in the drop down aren't wacky enough for you, or you can't get just that perfect shade of straw, dick on the 'Colour' button, then the coloured square, and use the picker to get the exact colour you want.

ALTERNATIVES

Adobe Photoshop Lightroom offers some excellent colour adjustment tools

The Quick Develop box in the Library module offers a White Balance Adjustment. *By default, the drop-down menu next to the WB will say 'As Shot' but click on this and you'll get a host of other options, such as Daylight, Cloudy, Shade, etc – basically the same ones you have on your digital camera.*

In the Develop module there's a colour temperature control called 'Temp'. *Sliding this to the right makes the image warmer, while going to the left cools it down. This slider affects only the Blue-Yellow channel; the magenta-green adjustment is on the 'Tint' slider, which you can ignore.*

HELP! Technique Advice

contact **wdchelpfile@ipcmedia.com** with your questions

Your technical problems, whether on shooting or editing, are answered by our experts in these pages

Localised Contrast Adjustments

Casey Brown

From: Norwich

Can you please explain how localised contrast adjustments work please, I'm confused!

Martin Evening replies: *We know that if we add contrast to a photo we can make it stand out more. But bumping up the contrast can only do so much to improve its 'global' appearance. If you make a photo too contrasty, you can destroy the delicate tonal balance and ruin a perfectly good picture. The technique described here is one that will allow you to add contrast at a localised level.*

The human eye is more attuned to localised contrast changes than changes in general, and it was this knowledge that led Adobe's Thomas Knoll to propose a localised contrast enhancement trick based on using a high Radius and low Amount setting in the Unsharp Mask filter dialog. This in turn led Thomas to devise the new Clarity control for Adobe Camera Raw 4.1 and Lightroom 1.1 (incidentally, Michael Reichmann has written an excellent article outlining this technique at www.luminous-landscape.com).

To be accurate, the Clarity adjustment combines this technique with another known as midtone contrast boosting, but the 'high Radius/low Amount' is so effective when applied on its own that I thought I'd share the basic steps here, especially for those of you who don't have the latest version of Photoshop or Lightroom.

Adjust the Radius setting

To start with I needed to find an image that would benefit from a localised contrast adjustment. I chose this particular photograph because the atmospheric haze had softened the detail on the shore and hillside in the distance.

The first step was to open the Unsharp Mask filter and set the Radius to a really high value, such as somewhere between 30 and 70. This is a much higher Radius than you would normally use and the trick is to set the Amount slider to a low setting so that you don't end up applying too strong an effect. If you try this technique out for yourself you will notice that if you set the Amount adjustment to a low setting and then adjust the Radius, you will see how Photoshop creates a soft shadow halo around the edges of the picture, which in effect creates a localised contrast enhancement.

In this screen shot (left) taken at a 100% view, you can see the before version on the left, and on the right you can see how the photograph looked after I had applied the Unsharp Mask filter. The difference can be quite dramatic, like removing a veil from in front of the lens.

Raising the Threshold

On Michael Reichmann's site he advises that you keep the Threshold value set to zero, but I have found that there are times where raising the Threshold can help dampen the localised contrast, so that in a strong daylight scene like this you can use the localised contrast technique as another way to enhance sharpness.

This is actually a scan of a 35mm transparency where the original scan had received a normal amount of capture sharpening, but I wanted to make some of the fine edge detail pop out more.

I used a high Radius/low Amount setting in the Unsharp Mask filter to boost the midtone contrast edges, but at the same time, I increased the Threshold setting to 10 because I needed to dampen the effect slightly to prevent dark halo shadows dogging up the shadow areas.

READER QUESTIONS

The experts help you with your technical woes

Which format for archiving?

Alan Durant

From: Chester

I am a little confused as to the best format to use for archive purposes. A month or so ago, WDC more or less suggested the best format to be TIFF, as it is lossless and likely to survive the test of time – this is how I have archived all my files having discarded the original Raw ones. Now I read that DNG is the format to use but without much information as to how it works; can it only convert RAW files and not existing TIFF files? Also, can DNG files be edited with Nikon's DX software?

Jamie replies: *Ah Alan, if only I had a crystal ball to give you the definitive answer. Unfortunately, this web of confusion and controversy will probably continue to rage as new formats come and old formats go, and as everybody has their own archiving preferences.*

I think the answer lies more in workflow, though. If you think of the Raw file, either your Nikon NEF or converted DNG files as negatives, which you open, make changes and then convert to TIFF, what happens is you then have two files – a Raw 'negative' and a TIFF 'print'. I personally feel it is a mistake to discard your Raw files, as you may want to go back to them in a few years – you wouldn't throw away your old film negatives, would you?

DNG is a new attempt at standardising the Raw format to one 'easy to open by all' format. At the moment, your Nikon software won't work with it, but Photoshop, Lightroom, DxO and a host of other software does, while Adobe has promised to support it forever (or as long as the company exists, at least). It's been around for a couple of years now and does seem to be gaining popularity with many photographers.

My advice, therefore, is to shoot in Raw and either keep them, or convert and keep them as DNG files. Edit your best pictures and save them as TIFFs, while taking and saving family snapshots as JPEG files. Always print out your best photos onto archival paper, storing them securely in archival albums such as those made by Secol or Kenro, and just to be safe, keep copies of everything on DVD.

Ask Adobe

Adobe

Got a question on Photoshop or Elements? Ask Adobe's imaging guru Terry Steeley

Images for the web

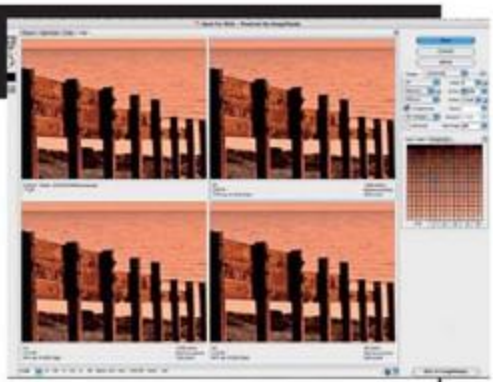
Trevor Hendicks

From: Bristol

I have recently purchased web space and hope to put my images onto the internet. However, this concept is very new to me and I would appreciate any advice about how I should prepare and save them. I'm a Photoshop CS user.

Terry replies: Begin by considering what size your image needs to be when displayed online? During this example, I will assume you suggested a width of 600 pixels. Open your first image into Photoshop and choose from the application menu... **Image > Image Size**. In the dialog box, click on the Resample Image option to ensure that is selected and then change the current resolution to 72 pixels per inch (this is the standard setting for screen display). In the Pixel Dimensions area, change the Width to be 600 pixels per inch (the height will proportionally scale). Click OK.

Select **File > Save for Web** (CS3: Save for Web & Devices). Most people who browse the internet will have broadband speeds of at least 512 Kbps and we will base our image optimisation on this speed. In the Save for Web dialog box, click on the Preview Menu button (small round button with a triangle pointing right) and select Size/Download Time 512 Kbps. This is important for evaluating our download speeds later. During the Save for Web process it is essential that you compare the visual appearance of the optimised image against the original. To achieve this, simply select the 2-Up tab (top left corner) and you will see a before and after version of the image, side-by-side.



JOIN OUR MAILING LIST TODAY To ensure that you never miss an Adobe or Iridius seminar with Terry Steeley visit **www.iridius.co.uk/mailinglist** and sign up for our newsletter.

What are these strange spots?

Joe Baker
From: Southport

Some of my pictures have strange blue (or sometimes red) out of focus spots on them. I don't think it's anything on the lens or sensor, since it doesn't occur all the time. Any idea what could be the cause?

Nigel replies: *Joe, what you're getting is flare. This happens when you shoot directly into the sun, with the sun in the frame or just outside of it, and is caused by stray non image-forming light coming into the lens from an angle and bouncing around your lens. Sometimes it manifests itself as the octagonal shape formed by the aperture blades. The simplest cure is to always use the recommended lens hood. This will cut out all light from outside the frame, though perhaps not when the sun is in shot. Also, make sure your lens is clean* and free of fingerprints, raindrops etc.

Is it wise to resize?

Bill Abernethy
From: Sussex

I shoot mostly in Raw before downloading my images and processing them in Elements 5. I start, for printing purposes, by cropping all images to 10x8in at 300 dpi and after processing, saving them on the highest quality JPEG setting, keeping my originals. When I need larger prints I create duplicates, resize the images, keeping the ppi at 300, and forward them to a professional lab. In my Image Size dialog box I notice that Scale Size/Constrain Proportions and Resample Image (Bicubic) are all ticked. I have tried resampling and not resampling the same image and haven't noticed any difference in either file size or quality of image under magnification. Bearing in mind that quality and sharpness of image are paramount, can you tell me what is the best option? If it is best not to resample, is there a way to undo this in the many hundreds of images I've already done?

Jamie replies: *Everyone has their own tales of resizing victories against conventional wisdom. In my view, a small amount of upsizing using Photoshop's Bicubic method has no viewable effect on your images.*

Similarly, if you're printing on an inkjet printer, then dropping the dpi setting to 200 will show no serious loss in quality at normal viewing distances.

There are specialised resizing plug-ins for Photoshop too, and we have recommended Genuine Fractals (www.dcpsystems.com) in the past. My recent experiments with Photoshop CS3 however, have shown that the latest algorithms are a match for Genuine Fractals'.

STEVE EXPLAINS

Puzzled by Photoshop? Art editor Steve Crabb helps out

What are hue, saturation and lightness?

Derek Longbone
From: Bournemouth

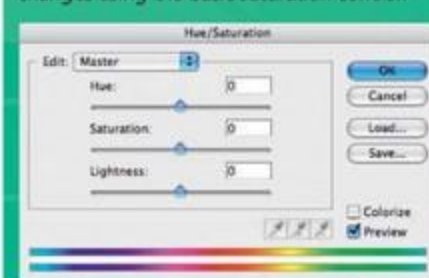
What's the difference between hue and saturation, as well as lightness in Photoshop?

Steve replies: *These terms aren't exclusive to Photoshop – they're accepted technical terms to describe certain aspects of image colour. Hue is, to put it simply, colour. You can shift the colour in your image along the spectrum. This shift is measured in degrees relating to a circular colour wheel. Adjusting hue can make a dramatic and often unsightly change to the colour in an image and needs to be used with restraint. It's particularly useful for adjusting a single region in the spectrum, such as reds or yellows. Hue is also useful if the White Balance is slightly off – you can use it to warm-up or cool-down an image.*

Saturation relates to the intensity of colour in an image. By desaturating an image, you remove colour to leave a monochrome greyscale picture that represents only the darkness and brightness, or the luminance. Oversaturating an image produces artificially intense colours.

Finally, lightness is a scale from totally black to totally white and has no effect on colour values. Don't forget, all these adjustments can be applied to the whole range of colour in the image using the Master control or just specific colours which can be picked from the drop-down box in the dialogue box.

If you are an Adobe Lightroom user you will find very accurate HSL controls in the Develop menu and make other more global changes using the basic saturation control.



Above: The Hue and Saturation dialogue box as it appears in Photoshop CS

READER PICTURES

Your pictures judged by Martin Evening

Evening Class

Photographic author and Photoshop guru Martin Evening passes his verdict on a selection of your photographs

Goose steps

Stacey Thew

From: Cornwall

This particular photo was taken at The Lost Gardens of Heligan near St. Austell, Cornwall. After seeing the goose spread out its wings I decided that I wanted to capture it when it next happened.

CAMERA: Fuji Finepix 6900
LENS: 35-210mm equiv. (fixed)
EXPOSURE: 1/64 sec

Now discontinued, Fujifilm's S6900 model offered a 3.3MP sensor and a 6x optical zoom

MARTIN SAYS:

Nature photography often involves a lot of hanging around, so all credit to Stacey for having the patience to wait until the goose had flapped its wings again. I have to say though, the birds in the top right corner of the frame are rather distracting and I feel that the the picture would look better if they were removed. In the screen shots you can see I added a new empty layer and removed these birds from the photo using the Clone Stamp tool in Photoshop. I always recommend you carry out the retouching on an empty new layer, as this way you can go back to it and undo it at a later date.

1

Identify the area to be cloned, then add a new layer to your image

2

The cloned area sits above the original image leaving it intact, but covered over

Feelings

Sarah Louise

From: London

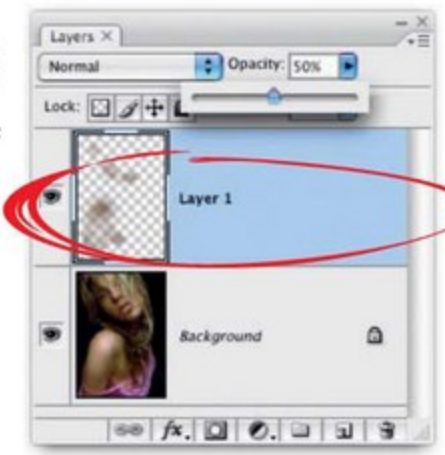
I studied graphic design at Loughborough University and in my final year discovered photography, after borrowing a camera from the department to take some pictures for a project. I now use a Canon EOS 5D, having previously used an EOS 350D and a PowerShot G6 – the latter of which was my first camera.

CAMERA: Canon G6
LENS: 35-140mm equiv. (fixed)
EXPOSURE: 1/100 sec

Canon's G6 offers a 4x optical zoom and a 7MP sensor, but has now been replaced by the G7 model

MARTIN SAYS:

An astute model with an interest in becoming a photographer will have the perfect opportunity to learn from watching other photographers at work, and Sarah's experience in front of the camera clearly shows here. The lighting is well controlled and has helped to create a natural look. I also have a feeling this is a self-portrait and the sexy, smouldering pose is one that Sarah has been able to carefully control herself. I think it is a good beauty photograph, but the retouching is very obvious on the face and arms. There are a lot of fashion photographers who like to do their own retouching, but in my view make a complete botch of it. This isn't bad retouching, it is just a little too heavy. My advice would be to always retouch on a separate layer and fade the retouching work to half the amount applied here. To illustrate this point, I have mocked up a Photoshop Layers palette (above) showing the retouch layer set to a lower opacity.



Medieval Fire

David Vollborth

From: France

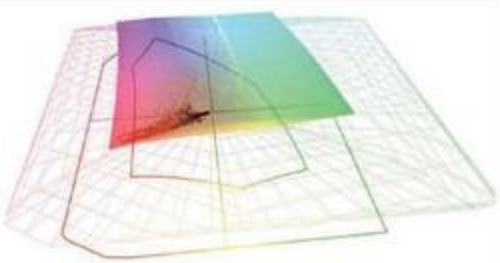
This is one of three pictures that I took recently one night at a Mediaeval Fête in Nemours, France. They were taken with my new Canon EOS 1D MkIII and have not been edited in any way.

CAMERA: Canon EOS ID MkIII
LENS: EF 24-70mm
EXPOSURE: 1/80 sec

The latest DSLR in Canon's portfolio offers a 10MP sensor and 10fps burst rate – at a price

MARTIN SAYS:

This is a nice, dramatic photograph, where David has got up close to the action and got down low with the camera to capture the best angle of the two fire-eaters. It has been shot slightly off-centre, which helps the composition. If David had used a higher ISO setting though, this would have allowed him to shoot at a faster shutter speed. Also, as David has a Canon 1D MkIII, he should really be shooting in Raw mode. The diagram above illustrates why shooting in JPEG mode can mean you lose important colour detail. Here I have plotted the pixel image data taken from David's photo, showing how the pixel colour values are distributed within the sRGB colour gamut, represented by the filled coloured shape. As you can see, many of the red and yellow pixels are clipped along the boundary of the sRGB gamut. It is safe to assume the camera sensor did pick up a lot more colour detail than was captured here, but had to squeeze the colours down into the sRGB colour gamut as it converted the capture data to a JPEG file. The wider wire frame gamut space represents the ProPhoto RGB gamut, which I prefer to use for retouching, as I know nearly all the colour detail has been preserved.



Havana Smoker

Mike Davis

From: Shropshire

I use a Nikon D80 with an 18-200mm VR lens and the accompanying shot was taken on holiday in Cuba, with a little Curves adjustment in postprocessing. This lady makes her (modest) living by posing for tourists' photos in a side street of old Havana, but she does have a very photogenic face.

CAMERA: Nikon D80
LENS: 18-200mm
EXPOSURE: 1/60 sec

The D80 has substantially fallen in price, making it a great-value semi-pro buy

MARTIN SAYS:

It looks like Mike made the most of every opportunity to photograph the people of Cuba and this particular shot is certainly a show-stopping photograph. You do have to put this photograph into its context though; as Mike explains, the lady photographed here likes to dress up and pose for tourists. Therefore, you can't say this is an authentic documentary photograph, in the same way as pictures taken of the 'dressed-up' punk rockers who pose down the Kings Road, Chelsea, are just an imitation of the real thing. Providing you view the picture in its correct context, you could best describe this as a fun, caricature portrait – and what is wrong with that? I could see this being made into a tourist postcard or even used as an advertising shot.

EVERY PICTURE PUBLISHED WINS!

Send us your pictures and not only will you get top advice from Martin but you will also get a brand new copy of the new version of the award-winning software package Adobe Photoshop Elements 5.0

Adobe Photoshop Elements 5.0 is the market-leading consumer photo-editing and management software. It boasts groundbreaking features and a user-friendly interface. Visit **www.adobe.co.uk**

Turn to page 162 for full details on how best to submit your pictures

What Digital Camera Techniques
Travel
Planning the perfect photo trip p04
Shooting successful travel shots p06
World's top photo destinations p10
Top photographers' travel tips p12
Photoshop Elements workshops p16

What Digital Camera Techniques

Take That!

Travel

Back in the July issue we challenged you to shoot travel photos using our tips... and here are the best

What Digital Camera WINNER!

CAMERA: Kodak V550
EXPOSURE: 1/500SEC, F/4.5

This stylish 5MP compact camera with 3x optical zoom features a viewfinder with its LCD screen.

Kemley Sellars

From: London

This shot was taken while hiking up the Franz Josef Glacier on New Zealand's south island. I was in the tenth month of my gap year travels where I had picked up my first digital camera and had seriously got the travel photography bug. After the grey skies of that morning the clouds parted to leave a magnificent blue sky. Knowing the weather may suddenly change I rattled off a few shots, and by sheer luck I managed to get the sun in just the right position. It's one of my top photos I've taken and I'm surprise that such a relative low-spec camera can produce such quality.

CAMERA: Nikon D80
EXPOSURE: 1/30sec.

Nikon's D80 will go head-to-head with two other DSLRs in next month's issue so stay tuned

Mark Allen

From: Belfast

I'm a semi-retired web designer currently doing the SPI Diploma in Photography (see *page 12 for details*). I still do web design, but most of my spare time is now devoted to photography. This shot is of Bow River in Banff, Canada.

CAMERA: Canon EOS 400D
EXPOSURE: 1/60sec.

Canon's 400D has become one of the most popular DSLRs, thanks to its 10MP sensor and antidust technology

Michael Foster

From: Liverpool

I took this photo on my recent travels through Australia, on my Canon EOS 400D. I didn't have my polariser with me so I saturated the image afterwards in Photoshop CS, as I felt the image needed a little more 'depth'. I was fortunate enough to be passing by early when there was nobody about, as usually the beach is packed with sunbathers and surfers, but the morning had, on this occasion, rewarded me with an nice clear sky and unspoilt view.

Can you TAKE THAT?

You could win a Joby Gorillapod SLR-Zoom!

All you need to do is read our free monthly technique pull-out, then send us your best picture on that theme. This month it's **Black & White Landscapes**, so get shooting. If your picture triumphs you'll win a fabulous (and extremely useful) Gorillapod SLR zoom. Weighing less than 250g, it's strong enough to hold a DSLR with a decent zoom lens. Not only can it be used as a mini tripod, but thanks to its unique design it can also be wrapped around trees, railings or whatever is to hand – perfect for long exposures or self-portraits.

*Submit up to three pictures on the **Black & White Landscapes** theme by **Thursday 20th September**. For submission guidelines and address details see page 162.*

TAKE THE Photoshop Challenge

One image mixed up in Photoshop; there are no rules... that's the challenge

Fancy yourself as a bit of a Photoshop whizz or a PaintShop pro? Whatever your favoured software, individual style or level of ability, we want to see what you can do.

Enter the Photoshop Challenge and you could win a copy of the fantastic new Adobe Lightroom 1.0 software.

Download the images now from our website and if the editor likes what he sees, you could be appearing in next month's issue of WDC.

THE IMAGE WE GAVE YOU

THE ROCKET

You lot gave us some spaced-out entries inspired by this image

Edward Webb

From: St. Austell, Conwall

I extracted the missile with Fluid Mask, and made copies of the missile with Smart Object for the blades, then placed each turbine on separate layers. I found the line tool essential for adding depth to the image. The perspective made placing the turbines on the lines greatly improved the composition. The shadows were made using the paint bucket tool on a selection of the turbine, then skewing and rotating copies of the shadow into position, which took a lot longer than I expected! I then used Gaussian Blur and blended the shadows with Color Burn to make the image more realistic. The turbines were subtly blended with luminosity on the top layer, and a normal layer below at 80% opacity.

OUR VERDICT

'The fact that Ed has managed to take a very plain image and create a complex pictorial setting completely removed from the original makes this a worthy winner. Top Photoshopping!'

Neale Didcock

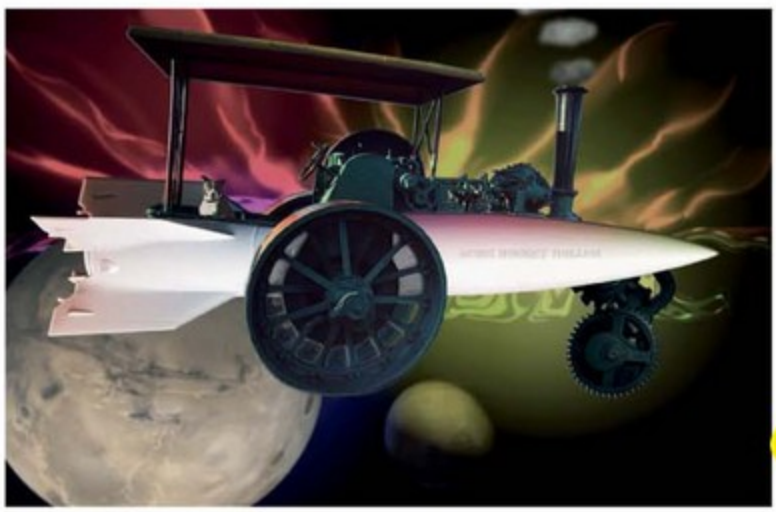
From: Liverpool

The original photo is of Fort Perch Rock in New Brighton on the River Mersey on the opposite side to Liverpool. The stick and jubilee clips were from my garage and the shed is my own! My long-suffering wife posed with a stick in my back garden (she thinks that I am bonkers!).

I used Paintshop Pro 9 for the image manipulation and I must say that I really enjoyed myself, which I think is the main purpose of the exercise.

OUR VERDICT

'Neale has managed to effortlessly combine several different elements and images to create an imaginative launch center. Poor Mrs Didcock though, being forced to launch rockets for the sake of her husband's art!'



Nick Duckworth

From: Australia

The rocket got me thinking what would happen if we ran out of oil and had to go back to steam or wind. First I put the background together pasting planets and using the paintbrush for the flares on a separate layer for blending. I had an image of a dog (Lenny Bruce) in a steamroller that I extracted and selected the parts needed, arranging these parts of the steamroller around the rocket. To make the roller rocket stand out and give it a 3D feel, I applied an inner bevel. I also applied a gradient with background colours at low opacity to give a reflective feel to the rocket.

OUR VERDICT

'This image shows fantastic levels of imagination and creativity, albeit resulting in a slightly bizarre setting! Completely different to the other two and unique among all of the entries'

NEXT MONTH'S Photoshop Challenge

Your mission, should you choose to accept it, is to transform this image...

To participate, simply download the high-resolution JPEG file from our website, manipulate it in any way you like (using any photo-editing software) and send it to us. You can combine it with other images, as long as you don't breach anyone's copyright (ie, all pictures are either yours or used with permission).

www.whatdigitalcamera.com/downloads

OUR EXAMPLE

'Failed Interior Design'

In this example WDC's Staff Writer Paul Nuttall teleported the kitty into an interior design nightmare. Can you do better?

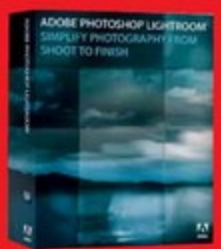
Paul says: I saw the expression on the little kitty's face and wondered what had made him sad. It was the job that his interior designer had done on his brand new minimalist loft, obviously.

WIN!

ADOBE PHOTOSHOP LIGHTROOM 1.0

WORTH £175! RRP

The best entry received, in the opinion of the Editor, wins a copy of Adobe's brand new software. Lightroom is a virtual toolbox for photographers, for managing, adjusting, and presenting your Raw or JPEG digital images.



Email your entry as a JPEG file to: wdc@ipcmedia.com, marked 'Photoshop Challenge'. Closing date: 14th September

What Digital Camera
What to buy... and how to use it

1063 Cameras, Lenses & Accessories in the UK'S BIGGEST BUYER'S GUIDE

Buyer's Guide

Looking to buy a digital camera, lens or accessory? *Then start here!*

The *What Digital Camera* Buyer's Guide is the most comprehensive listing of current cameras and accessories in the UK. More than 1000 products are listed here to help you choose what to buy and what to avoid.

We try to keep this list as up-to-date as possible, and this inevitably means listing products that we haven't yet tested, due to publishing lead times. We indicate new products by a **NEW** beside the item in the listing, and add our score as soon as we've completed our test. Conversely, some products will remain in our listings after they have officially been discontinued (subject to space). We continue to list them while stocks are still available to buy and check availability on a monthly basis.

Despite the mass of information here, these are just summaries of our tests. Before making your purchase, why not read the whole test by buying a back issue or a test report from our website (at www.whatdigitalcamera.com) or call us on 01707 273773?

AT A GLANCE

GUIDE CONTENTS

Digital cameras (fixed lens)	p128
Digital SLRs	p136
Lenses	p140
Flashguns	p144
Bags	p146
Tripods	p147
Portable storage	p148
Media Cards	p149
Printers, Scanners and All-in-ones	p150
Software	p154
Contact listing	p155

ABOUT WHAT DIGITAL CAMERA'S TESTS

Every month *What Digital Camera*'s technical team tests the latest cameras and accessories to help you sort the wheat from the chaff. Our team of highly experienced photographers subject our review samples to field tests and, in the case of cameras and lenses, to lab analysis using software from DxO and Imatest. We are confident that our tests are the most authoritative in the UK.

PARK CAMERAS
Pro Dealers for over 35 Years
Visit www.Park Cameras.com/wdc for LOW Prices & Superb Service

Everything you need to know to help you make the right choice

What Compact

In today's competitive marketplace there is a wide variety of digital cameras, each zeroing in on particular users' needs. While pixel counts have been climbing ever higher, and in doing so outgunning the specification currently offered by camera phones, prices have been steadily falling.

That's thanks in part to the fact that just about everyone who wants a digital camera has one. So, to generate sales, manufacturers are now focusing their development teams on those little extras that differentiate them from the competition, whether it be a 10x optical zoom crammed within a compact body, the ability to shoot in low light without flash at high ISO speeds, or anti-shake in the form of either optical or mechanical (CCD-shift) image stabilisation.

All as clear as mud? Never fear, *WDC* is here to lay bare the key features and types of camera you need to consider before parting with your hard-earned cash...

BUYING ADVICE: CHOOSING A COMPACT

CONSIDER YOUR NEEDS: Think about how you will use your camera – is it for day-to-day snaps, for example, or do you want to shoot landscapes? Choose the best model for your life and photographic style.

RESOLUTION: More pixels doesn't always mean a camera's better. A recent study showed that most people can't tell the difference between a 5MP or 8MP image when printed to 5x7inches.

BATTERY POWER: Most compacts use either Lithium-Ion rechargeable, or AA batteries. Decide which are the most appropriate – if you're on a gap year in Thailand, AA batteries may be easier to come by than a convenient power point.

KEY: THE COMPACT CAMERA LISTINGS EXPLAINED

	Fujifilm F30	£160 (£230rrp)	6 Mega Pixels	36-108mm f/2.8-5	Program Aperture Shutter Manual 16 Scene	100-3200	No 2.5	xD LI	93 x 57 x 28mm 195g	PROS Great images in low light up to ISO 3600, fast, hi-res screen CONS No viewfinder, misleading manual position	A great camera with few bad habits aimed at everyday snappers and leading the field in low light performance	88% What Digital Camera RECOMMENDED	TESTED SEP 2006
1		2	3	4	5	6	7	8	9	10	11	12	13

1 PRODUCT NAME
Name of manufacturer and camera model. And, a small thumb-nail image of the product itself

2 PRICE
A Suggested retail price
B Average street price

3 SENSOR
Number of pixels

4 LENS
We use 35mm equivalent focal length and show the maximum aperture at wide and telephoto positions

5 EXPOSURE MODES
Most have Program AE for automatic shooting, but some have manual controls

6 ISO RANGE
The wider the better, especially for poor light

7 VIEWING
A Optical or Electronic (Evf)
B LCD size in inches

8 MEDIA CARD/POWER
A Card type (Internal memory in GB)
B Battery Lithium Ion (LI), AA Alkaline or rechargeable (AA)

9 DIMENSIONS/WEIGHT
Length x Height x Depth

10 PROS & CONS
What we like
What we don't

11 COMMENTS
Additional Information

12 RATIING
Out of 100%

13 TESTED
Date of the WDC issue this test appeared in

What Digital Camera GOLD AWARD
GOLD AWARD
For scores over 90%

What Digital Camera RECOMMENDED
RECOMMENDED AWARD
For scores over 85%

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

Which best suits your photographic requirements: compact, slim-line, bridge, superzoom or enthusiast?

Point and shoot ➜

Most of us want a portable camera that will slot into a trouser or shirt pocket for spur-of-the-moment snaps, and work out for itself the best focus and exposure. Such fully auto models tend to have the lowest resolution on offer, but that's sufficient quality for photo-realistic prints at regular postcard or A4 sheet size. When buying a snapshot camera opt for a major brand, and don't spend much less than £100.

← Lifestyle

If style is important to you then there is a bewildering array of cameras to choose from. The camera's body will be fashioned to a greater degree from metal rather than plastic, and of course the price reflects this. Still, you'll typically have a resolution of between 8 and 10 megapixels, often with an internally stacked zoom lens and, increasingly, WiFi capabilities.

All weather and/or shockproof ➜

Another way in which manufacturers are attempting to differentiate their compacts is by giving them sealed weatherproof or waterproof bodies, while Olympus markets a camera that is also shockproof. So if you like adventure sports or you're simply butter fingered – check out these babies that will bounce back for more.

←Enthusiast

A camera that may require a steep learning curve for the beginner, but which offers plenty of manual control. It may not feature a huge zoom capacity but is nevertheless stacked with real photographic features. As such, enthusiast models set themselves up as ideal back-up cameras for those who already own a DSLR, but want something more portable for that spur-of-the-moment picture-taking opportunity.

Superzoom ➜

Want to get up close and personal with your subject matter but don't want the bulk or price of a DSLR? Then the 10x or 12x optical zoom capability offered by these enthusiast-targeted models will come in handy – the theory being that they offer so much control, the user won't actually need an SLR. The downside is that superzooms are bulkier than other types of 'compact', and ideally need a decent image-stabilisation system when shooting at the telephoto end of the zoom.

What Digital Camera

Need to Know

Dazed and confused? Our guide to all the techno-babble will ease your pain...

RESOLUTION AND SIZE OF CCD

All digital cameras provide a resolution measured in megapixels (one million pixels = one megapixel), with 10 megapixels (which will provide enough picture information to allow photo-realistic, poster-sized prints) being the current maximum for compacts. At the entry level, you'll find manufacturers offering cameras with 4MP or 5MP, which is still perfectly acceptable for a standard 6x4in or 8x10in print. But a camera's resolution isn't everything – the internal processor and lens also have important roles to play. Furthermore, the physical size of the sensor and individual pixels can really make a difference.

ISO SPEEDS

All but the most basic point-and-shoot digital cameras offer the ability to manually adjust ISO speed to take into account the lighting conditions at the time, with settings equating to those given for film – ISO 100 for bright, sunny conditions, ISO 400 for cloudy, and so on. The latest trends in lifestyle photography, however, have pioneered turning off the camera flash and utilising the more flattering effects of natural light, thus requiring higher ISO speeds to avoid camera shake (and image blur) in dimmer light. Companies such as Fujifilm and Ricoh have pioneered higher settings such as ISO 1600-3200 in their compacts – most of them previously stopped at ISO 400 to avoid pronounced image noise. So, if you want to avoid bleached faces and that rabbit-in-the-headlights looks when taking portraits indoors, look for a camera with a fast ISO speed, and preferably some form of image stabilisation and noise reduction built in.

ZOOM LENS

Just about every digital camera comes with a zoom lens – that brings your subject closer without you literally having to take a few steps forward – as opposed to a (non-moving) 'fixed' variety. Most entry-level compacts offer a fairly modest 3x optical zoom, though increasingly larger 10x and 12x zooms have become the norm on enthusiasts' models. Specifications are also often given that take into account an additional digital zoom; it's best ignored, as all this does is crop a central portion of the image to give the effect of having zoomed in. If size and portability of your camera is an issue, you might also like to consider whether to go for an internally stacked lens system rather than one that (more traditionally) stands proud of the body.

ANTI SHAKE/IMAGE STABILISATION

Under certain conditions the effects of hand wobble – known as 'camera shake' – become more pronounced; the result being that blurred images are captured. A way of solving this, though, is to include an anti-shake feature, the most effective being optical (a feature of the lens elements) or mechanical (the CCD or internal chip shifts to counterbalance external motion). If you're serious about your photography, some form of image stabilisation is essential, especially with longer zoom lenses or if you use your LCD monitor to compose your images at arm's length.

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS
Pro Dealers for over 35 Years

				LENS	EXP MODES	ISO	VIEW/LCD (in)	MEMORY/BATT	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Fujifilm A610	£75 (£100 rrp)	6 Mega Pixels	39-117mm f/3-5.4	Auto Manual 14 Scene	Auto 100-400	No 2.5	xD/SD 10 AA	97.5 x 61.9 x 31mm 145g	**PROS** Manual option, large screen for budget compact **CONS** Slightly bulky, agressive noise reduction, fringing, limited ISO range	Poor image quality lets down an otherwise good entry-level model	78%	TESTED JUL 2007
	Nikon L10	£80 (£105 rrp)	5 Mega Pixels	37.5-112.5mm f/2.8-5.2	Auto 16 Scene	Auto 64-800	No 2	SD 7 AA	89.5 x 60.5 x 26 mm 115g	**PROS** Design, ease of use, image quality **CONS** Slow writing speed	Ticks most of the boxes you want in an entry-level camera and offers good value for money	80%	TESTED JUL 2007
	Samsung S630	£80 (£85 rrp)	6 Mega Pixels	35-105mm f/2.8-4.9	Auto Program 11 Scene	Auto 80-400	No 2.5	SD 16 AA	99.8 x 62.8 x 25.7mm 136g	**PROS** Manual option, shake reduction **CONS** Utilitarian design, menus not intuitive	A good starter camera with a range of options	80%	TESTED JUL 2007
	Canon A460	£85 (£120 rrp)	5 Mega Pixels	38-152mm f/2.8-5.8	Program 9 Scene	Auto 80-400	Yes 2	SD AA	106 x 52 x 40mm 215g	**PROS** Ease of use, optical viewfinder **CONS** Low-resolution LCD, lacks wide angle	Replacing the PowerShot A430, the entry-level PowerShot A460 adds improved specifications while retaining the point-and-shoot functionality of its predecessor	82%	TESTED MAY 2007
	Fujifilm A700	£90 (£110 rrp)	7 Mega Pixels	36-108mm f/2.8-5.2	Program 4 Scene	Auto 100-400	No 2.4	xD 12 AA	93 x 60 x 30mm 139g	**PROS** An excellent price, including manual mode with a simple control layout **CONS** Low-res LCD, slow to use and max ISO of 400	A basic point-and-shoot camera with little to shout about, but the A700 does everything it should	77%	TESTED APR 2007
	Olympus FE-210	£90 (£100 rrp)	7 Mega Pixels	38-114mm f/3.1-5.9	Auto 15 Scene	Auto 64-640	No 2.5	xD 9 AA	90 x 62.5 x 30.5mm 122g	**PROS** Image quality, design **CONS** ISO can't be set manually	Olympus has been a top name in compact cameras for years and this proves to be a competitive model	82%	TESTED JUL 2007
	Kodak M753	£100 (£120 rrp)	7 Mega Pixels	37-111mm f/2.8-5.2	Program 17 Scene	Auto 80-1250	No 2.5	SD 16 LI	93 x 58 x 23mm 115g		One of Kodak's latest compacts and the first in the 'M' range. Coming in a choice of six colours, the M753 boasts HD capture, image stabilisation and Kodak's Perfect Touch technology		NOT YET TESTED
	Samsung S830	£100 (£120 rrp)	8 Mega Pixels	35-105mm f/2.8-5.2	Auto Program Manual 10 Scene	Auto 50-400	No 2.7	SD 20 AA	99.6 x 61.8 x 26.9mm 169g	**PROS** Image quality, manual control, clear and responsive LCD **CONS** Bulky, awkward controls	A good choice as a budget model with plenty of features	85% What Digital Camera RECOMMENDED	TESTED JUL 2007
	Nikon L11	£100 (£120 rrp)	6 Mega Pixels	37.5-112.5mm f/2.8-5.2	Auto 16 Scene	Auto 64-800	No 2.4	SD 7 AA	89.5 x 60.5 x 27 mm 125g		**LOOK OUT FOR OUR REVIEW IN NEXT MONTH'S ISSUE**		COMING SOON...
	Pentax E30	£100 (£120 rrp)	7 Mega Pixels	36-108mm f/2.7-4.8	Auto Program 12 Scene	Auto 80-400	No 2.4	SD 11 AA	61.5 x 94.5 x 35.4mm 137.5g	**PROS** Price, design **CONS** Exposure variation, LCD hard to see in bright light, auto mode a little slow	A good budget option, but in this case you get what you pay for. You may soon want to upgrade to another model from the range	79%	TESTED JAN 2007
	Fujifilm A800	£100 (£140 rrp)	8 Mega Pixels	36-108mm f/2.8-5.2	Auto Manual 14 Scene	Auto 100-800	No 2.5	xD/SD 10 AA	97 x 62 x 31mm 151g	**PROS** Simplicity, Super HR CCD sensor **CONS** Minor issues with images, digital image stabilisation	As point and shoots go, the A800 should keep all but the discerning punters happy. Minor image faults are minimal – especially for the audience this is aimed at – and are outweighed by the camera simplicity and ease of use.	82%	TESTED SEP 2007
	Panasonic LS60	£105 (£130 rrp)	6 Mega Pixels	35-105mm f/2.8-5.0	Auto 19 Scene	Auto 100-1250	No 2	SD 27 AA	93.7x 62 x 29.7mm 135g	**PROS** Wide ISO range, image stabilisation, easy zoom function, exposure compensation **CONS** A little chunky, no manual option	An excellent starter camera with lots of options	83%	TESTED JUL 2007
	Sony S600	£110 (£160 rrp)	6 Mega Pixels	31-93mm f/2.8-5.1	Auto 7 Scene	Auto 80-1000	Yes 2	MS AA	99 x 52 x 36mm 181g	**PROS** High ISO 1000, wide lens, reasonable price **CONS** Noise at ISO 1000, plastic body, clunkiness	A middle-of-the-road camera despite an impressively high ISO	82%	TESTED FEB 2007
NEW	Vivitar 6200w	£115 (£130 rrp)	6 Mega Pixels	n/a f/3.3	Auto 8 Scene	n/a	Yes 2	SD AA	120 x 78 x 43mm 230g	**PROS** In-water ability, handling, affordable **CONS** Bulky design, poor image quality	Whilst the VivitCam 6200w provides acceptable results in the water at an affordable price, the overall feel of the camera is such that using it anyplace else is an unpleasant experience.	75%	TESTED SEP 2007
	Nikon L12	£115 (£150 rrp)	7 Mega Pixels	35-105mm f/2.8-4.7	Auto 15 Scene	Auto 80-1600	No 2.5	SD AA	91 x 61 x 26mm 125g	**PROS** ISO range, Vibration Reduction, design, muppet-proof **CONS** Slow writing speed, no manual ISO adjustment, noise	A great camera for someone who doesn't want the hassle of reading manuals, or full manual control. It is intuitive and user friendly with good tools to help the digital novice	86% What Digital Camera RECOMMENDED	TESTED SEP 2007
	Panasonic LS75	£115 (£150 rrp)	7 Mega Pixels	35-105mm f/2.8-5.0 Stabilised	Auto 20 Scene	Auto 100-3200	No 2.5	SD 27 AA	93.7 x 62.0 x 29.7mm 138g		Decent-looking 7MP compact with Mega OIS stabilisation and impressive ISO range		NOT YET TESTED
	Nikon L6	£120 (£120 rrp, was £300)	6 Mega Pixels	38-116mm f/3.2-5.6	Program 17 Scene	Auto 50-800	No 2.5	SD 23 AA	91 x 61 x 26mm 175g	**PROS** Good image quality, plenty of scene modes **CONS** Noisy, whirring zoom	There's very little control over what it does, but with plenty of light delivers nice results	72%	TESTED FEB 2007
	Kodak V803	£120 (£150 rrp)	8 Mega Pixels	36-108mm f/2.8-4.9	Program 22 Scene	Auto 80-1600	No 2.5	SD 32 LI	103 x 55 x 25mm 141.5g	**PROS** Rapid image reviewing, good detail, value for money **CONS** Slightly bulky, LCD tends to 'streak'	An accessible camera that provides easy access to features often overlooked by beginners, at an entry-level price	85% What Digital Camera RECOMMENDED	TESTED JUN 2007
	Sony S700	£120 (£170 rrp)	7 Mega Pixels	35-105mm f/2.8-4.8	Auto Program 11 Scene	Auto 100-1000	No 2.4	MS 24 AA	91 x 61 x 25.5mm 149g		Basic budget model with good ISO range		NOT YET TESTED
	Pentax M30	£120 (£140 rrp)	7 Mega Pixels	38-114mm f/3.1-5.9	Program 15 Scene	Auto 64-3200	No 2.5	SD 22 LI	57 x 97 x 18mm 120g	**PROS** Metal body, fuss-free image capture, good value **CONS** Noisy (even at low ISO settings), unintuitive menu system	Average spec model with the exception of ISO 3200 for low-light work, but has a metal body and produces decent results	86% What Digital Camera RECOMMENDED	TESTED MAY 2007

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

VIEW ALL TESTED CAMERAS 360° AT WWW.WHATDIGITALCAMERA.COM

				LENS	EXP MODES	ISO	VIEW/LCD (IN)	MEMORY/BATT	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Fujifilm F31fd	£125 (£210rrp)	6 Mega Pixels	36-108mm f/2.8-5	Program Shutter Aperture 16 Scene	Auto 100-3200	No 2.5	xD 10 LI	93 x 57 x 28mm 155g	PROS Fast AF and zoom action, great image quality up to ISO 400 CONS Bland looks, boring zoom range	Face detection marks the difference between this and the Fuji F30, but it's debatable how useful this is. The F31fd is pretty good but doesn't set the world on fire	86% What Digital Camera	TESTED MAR 2007
	Nikon S9	£125 (£150 rrp)	6 Mega Pixels	38-114mm f/3.5-4.3	Program 15 Scene	Auto 64-400	No 2.5	SD 24 LI	90 x 58 x 20.4mm 115g		Nikon 'Style' model with face priority AF, in-camera redeye fix and D-Lighting features		NOT YET TESTED
	Samsung S1030	£130 (£130 rrp)	10 Mega Pixels	35-105mm f/2.8-5.1	Auto Program Manual 10 Scene	Auto 80-1000	No 2.7	SD 45 AA	99.6 x 61.8 x 26.9mm 169g	PROS Simplicity of use, straightforward menus, good value for money CONS Basic design, slight fringing	The Samsung S1030 won't win any prizes for design innovation, but it delivers good results at a remarkably low price.	83%	TESTED AUG 2007
	Olympus FE-230	£130 (£150 rrp)	7 Mega Pixels	35-105mm f/2.8-4.9	Auto 18 Scene	Auto 50-1250	No 2.5	xD 20 LI	90.5 x 55 x 16.5mm 105g		Plenty of scene modes as well as generous ISO capabilities mark the FE-230 as a useful budget buy		NOT YET TESTED
	Samsung L700	£130 (£200 rrp)	7 Mega Pixels	38-114mm f/3.1-5.9	Auto Program 11 Scene	Auto 50-1600	No 2.5	SD 20 LI	96.9 x 56.8 x 20.5mm 130g		LOOK OUT FOR OUR REVIEW IN NEXT MONTH'S ISSUE		COMING SOON...
	Panasonic FX10	£130 (£160 rrp)	6 Mega Pixel	35-105mm f/2.8-8	Program 20 Scene	Auto 100-3200	No 2.5	SD LI	94 x 51 x 24mm 125g		An image-stabilised Leica lens and sensible pixel count could make the FX10 appealing. Available in blue, black and silver		NOT YET TESTED
	Fujifilm F650	£130 (£170 rrp)	6 Mega Pixels	36-180mm f/2.8-4.7	Program Aperture Shutter 4 Scene	Auto 64-400	No 3	xD 32 LI	104.1 x 60.3 x 30.6mm 170g		A well-specified model from Fujifilm with a large 3in LCD and, we're told, a TV-quality movie mode		NOT YET TESTED
	Panasonic LZ5	£130 (£170 rrp)	7 Mega Pixels	37-222mm f/2.8-4.5	Auto 19 Scene	Auto 100-3200	No 2	SD 27 AA	98.5 x 62.3 x 33.1mm 180g		Strong zoom and a good ISO range make the LZ5 look like a promising compact		NOT YET TESTED
	BenQ C1000	£130 (£150 rrp)	10 Mega Pixels	38-108mm f/2.8-5.1	Program Aperture Shutter Manual 13 Scene	Auto 64-200	No 2.4	SD AA	89 x 60.5 x 32.7mm 140g	PROS Price, large monitor, wide range of exposure modes CONS Battery usage high, purple fringing, max ISO 200	The C1000 delivers good results and has a generally high spec, but just make sure you stock up on rechargeable batteries	83%	TESTED MAY 2007
	BenQ X725	£130 (£165 rrp)	7 Mega Pixels	375-1125mm f/2.7-5.2	Auto 28 Scene	Auto 80-1600	No 2.5	SD 12 LI	91 x 60 x 14.7mm 120g		Slim compact with anti-shake, a host of scene modes and coming in a choice of four colours.		NOT YET TESTED
	Kodak Z710	£130 (£280 rrp)	7 Mega Pixels	38-380mm f/2.8-3.7	Auto Program Aperture Shutter Manual 18 Scene	Auto 64-800	Evf 2	SD 32 LI	98 x 78 x 73mm 285g	PROS Nice price, focal range, manual exposure controls CONS Average image quality, small LCD, sensitive pop-up flash	Delivering average image quality and performance, the Z710 is nevertheless good value for those seeking enhanced creative features on a budget	79%	TESTED JAN 2007
	Sony W55	£130 (£170 rrp)	7 Mega Pixels	38-114mm f/2.8-5.2	Auto 7 Scene	Auto 100-1000	No 2.5	MS 56 LI	89 x 57 x 23mm 116g		In true Sony style, the W55 looks the part with its aluminium casing, and the spec looks promising too		NOT YET TESTED
	Panasonic FX3	£135 (£200 rrp)	6 Mega Pixels	35-105mm f/2.8-5 Stabilised	Program 18 Scene	Auto 100-400	No 2.5	SD 13 LI	94.1 x 51.1 x 24.2mm 125g	PROS Beautiful design, Mega OIS CONS Low-resolution LCD, aggressive noise reduction	The FX3 may not have advanced shooting modes, but its gorgeous looks, sensible resolution and image-stabilised lens recommend it	85% What Digital Camera	TESTED MAR 2007
	Sanyo E7	£140 (£180 rrp)	7 Mega Pixels	38-114mm f/3.1-5.9	Program 14 scene	Auto 50-800	No 2.5	SD 23 LI	91x 56x 21.mm 116g	PROS plenty of features, metal diary shell, touch sensor shutter CONS Low resolution LCD, low image quality, average WB and exposures	The Xacti E7's metal shell is packed full of features, but thiss fails to compensate for fundamentally poor image quality	81%	TESTED JUL 2007
	Nikon L5	£140 (£200 rrp)	7 Mega Pixels	38-190mm f/2.9-5.0 Stabilised	Auto BestShot 15 Scene	Auto 80-400	No 2.5	SD AA	97 x 61 x 45mm 170g	PROS Face-recognition focusing, VR lens stabilisation CONS Average image quality, slow performance	Despite offering interesting features such as the face-recognition focusing, the L5's performance remains at the entry level end of respectable	76%	TESTED JAN 2007
	Kodak V1003	£140 (£200 rrp)	10 Mega Pixels	36-108mm f/2.8-4.9	Program 22 Scene	Auto 80-160	No 2.5	SD 32 LI	103 x 55 x 25mm 141.5g	PROS Fast start-up and AF, design, exposure options, price CONS Button layout, noise	Good family compact, due to its looks, flexibility and attractive price. Image quality isn't bad either for a 10MP camera	82%	TESTED JAN 2007
	Olympus Mju 760	£140 (£200 rrp)	7 Mega Pixels	37-111mm f/3.4-5.7	Auto 22 Scene	Auto 64-1600	No 2.5	xD 18 LI	99 x 54 x 24.4mm 120g	PROS Weatherproof, choice of colours, comes with a 512MB xD card CONS Noisy across ISO range, over-sharpened images	Great for modest print sizes but nothing much to shout about, making it a rather average camera	83%	TESTED JAN 2007
	Samsung NV3	£145 (£230 rrp)	7 Mega Pixels	38-114mm f/3.5-4.5	Auto Program 11 Scene	Auto 80-1000	No 2.5	SD 15 LI	94 x 57 x 17.5mm 142g	PROS Eay to use, good design and quick start-up CONS Design not to all tastes, imaging specs suffer	Image quality and features aren't much to write home about, but the NV3 proves itself as an innovative and effective package at a good price	83%	TESTED DEC 2006
	BenQ T700	£145 (£165 rrp)	7 Mega Pixels	375-1125mm f/2.7-5.2	Auto 28 Scene	Auto 80-1600	No 2.5	SD 12 LI	91 x 60 x 14.7mm 120g		Slim compact with anti-shake, a host of scene modes and coming in a choice of four colours.		NOT YET TESTED
	Kodak Z612	£145 (£300 rrp)	6 Mega Pixels	35-420mm f/2.8-4.8	Program Aperture Shutter Manual Auto 16 Scene	Auto 80-800	Evf 2.5	SD 32 LI	104 x 74 x 69mm 300g	PROS User friendly, versatile lens, good range of scene and manual modes CONS Clunky operation, poor shutter button design, a few image quality quirks	A pleasing camera that lives up to its 'superzoom' tag. Some image quality and operational quirks	85% What Digital Camera	TESTED SEP 2006

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS Pro Dealers for over 35 Years

				LENS	EXP MODES	ISO	VIEW/LCD (in)	MEMORY/BATT	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	HP R837	£150 (£180rrp)	7 Mega Pixels	39-118mm f/3.5-4.2	Program 12 Scene	Auto 100-400	No 3	SD 32 U	100 x 64 x 27mm 155g		Metal-shelled 'style' camera featuring plenty of in-camera enhancement options such as a slimming mode, adaptive lighting and 'pet-eye' reduction		NOT YET TESTED
	Panasonic LZ7	£150 (£190 rrp)	7 Mega Pixels	37-222mm f/2.8-4.5	Auto 19 Scene	Auto 100-3200	No 2.5	SD 27 AA	98.5 x 62.3 x 33.1mm 180g		Similar to the LZ6 but with a larger LCD		NOT YET TESTED
	Casio EX-Z75	£150 (£180rrp)	7 Mega Pixels	38-114mm f/3.1-5.9	Program Best Shot	Auto 50-400	No 2.6	SD U	95.4 x 60.6 x 19.6mm 122g		Slim and stylish the EX-Z75 will be available in blue, pink and silver combining 7MP with a generous 2.6in LCD		NOT YET TESTED
	Nikon S200	£150 (£175 rrp)	7 Mega Pixels	38-114mm f/3.1-5.9	Auto 15 Scene	Auto 50-1000	No 2.5	SD 20 U	91.5 x 56.5 x 18.5mm 125g	PROS Image quality, slim body, extensive specification CONS No Program mode, excessive sharpening	Quality build and specification coupled with slick performance make the S200 an excellent choice	88% What Digital Camera RECOMMENDED	TESTED JUL 2007
	Fujifilm Z5fd	£150 (£200 rrp)	6 Mega Pixels	36-108mm f/3.5-4.2	Auto 18 Scene	Auto 100-1600	No 2.5	xD U	93 x 55 x 19mm 148g	PROS Slim, sexy design, fast start up and AF, manual option for greater control CONS Shame there's not a black option, slow zoom action that whines a bit	Stunning looks with performance to match make the Z5fd much more than the 'average' style camera and at a good price too	87% What Digital Camera RECOMMENDED	TESTED APR 2007
	Fujifilm F40fd	£150 (£230 rrp)	8 Mega Pixels	36-108mm f/2.8-5.1	Program 14 Scene	Auto 100-2000	No 2.5	xD U	96 x 59 x 23mm 155g	PROS Takes xD and SD media, large anti-reflective LCD, great exposures and white balance CONS No manual shooting mode, easy to change mode accidentally	Looks good and takes good pictures but the lack of manual control makes it a touch expensive for an 8MP 'point and shooter'	84%	TESTED JAN 2007
	Casio EX-Z700	£150 (£200 rrp)	7 Mega Pixels	38-114mm f/2.7-5.2	Program 37 Scene	Auto 50-400	No 2.7	SD 8 U	88 x 57 x 20.5mm 112g		Casio claims long battery life and an extra-bright screen on this well-specified slimline model		NOT YET TESTED
	Olympus FE-200	£150 (£170rrp)	6 Mega Pixels	28-140mm f/3.3-4.8	Program 13 Scene	Auto 64-400	No 2.5	xD 24 U	97 x 59 x 27mm 155g	PROS Fully automatic, impressive zoom CONS Primitive image quality, feeble flash	If you just want a point-and-shoot and to make 5x7in prints, that's what the FE-200 does, and the zoom range is impressive	76%	TESTED FEB 2007
	Pentax A20	£150 (£280 rrp)	10 Mega Pixels	38-114mm f/2.8-5.4 Stabilised	Program Auto Aperture Shutter 12 Scene	Auto 64-400	No 2.5	SD 22 U	88.5 x 54.5 x 23mm 125g	PROS Image quality, manual shutter speed and aperture, compact size CONS Slow reviewing of images, slow point-and shoot capability	The 10MP sensor produces sharp images that are impressive when shot in good light. Even when shooting under darker circumstances, the A20 manages to generate crisp, high quality shots	86% What Digital Camera RECOMMENDED	TESTED MAR 2007
	Casio EX-Z1050	£150 (£230 rrp)	10 Mega Pixels	38-117mm f/2.8-8	Program 38 Scene	Auto 80-800	No 2.6	SD U	91 x 57 x 24mm 125g	PROS Image quality, bright LCD, good battery life CONS Small buttons	Simple to use and produces good quality images, even at high ISO settings	87% What Digital Camera RECOMMENDED	TESTED JAN 2007
	Olympus FE-240	£150 (£180rrp)	7 Mega Pixels	38-190mm f/3.3-5.0	Auto 15 Scene	Auto 50-1000	No 2.5	xD 20 U	93.5 x 56 x 20mm 115g		Slim but smart, the FE-240 boasts an impressive 5x optical zoom		NOT YET TESTED
	Fujifilm S5700	£150 (£190 rrp)	7 Mega Pixels	38-380mm f/3.5-3.7	Program Auto Aperture Shutter Manual 12 Scene	Auto 64-1600	Evf 2.5	SD 27 AA	106.1x 75.7 x 80.7mm 304g	PROS Image stabilisation, useful features, weight and size CONS Fringing, limited colour options, Raw mode taken out of upgrade	A fantastic camera with plenty of features, but unfortunately, image quality isn't up to standard and devalues an otherwise competent performer. It really is a shame because this could be the perfect bridge camera for a great price.	83%	TESTED AUG 2007
	Ricoh R5	£150 (£280 rrp)	7 Mega Pixels	28-200mm f/3.3-4.8 Stabilised	Program 9 Scene	Auto 64-1600	No 2.5	SD 26 U	96 x 55 x 26mm 140g	PROS Great lens, image stabilisation, high ISO CONS Design, noise at high ISO, no viewfinder	The R5 offers something different in a compact form without compromising much on image quality	87% What Digital Camera RECOMMENDED	TESTED NOV 2006
	Kodak V610	£160 (£350rrp)	6 Mega Pixels	38-114mm f/3.9-4.4 130-380mm f/4.8	Auto Potrait 21 Scene	Auto 64-800	No 2.8	SD 32 U	111 x 55 x 23.2mm 160g		Dual-lens with a 10x optical zoom as well as a 2.8in LCD and Bluetooth technology		NOT YET TESTED
	Panasonic FX12	£160 (£190 rrp)	7 Mega Pixels	35-105mm f/2.8-5.0	Auto 21 Scene	Auto 100-1250	No 2.5	SD 27 U	94.1 x 51.4 x 24.2mm 153g		Compact and stylish with a good ISO range and a stabilised lens		NOT YET TESTED
	Sony W80	£165 (£199 rrp)	7 Mega Pixels	35-105mm f/2.8-5.2	Program 7 Scene	Auto 100-3200	Yes 2.5	MS 31 U	91 x 58 x 22.9mm 124g		Sony's successful W series continues with this 7MP compact		NOT YET TESTED
	Nikon S7c	£170 (£300 rrp)	7 Mega Pixels	35-105mm f/2.8-5	Program 11 Scene	Auto 50-1600	No 3	SD U	101 x 60 x 21mm 140g	PROS Styling, extensive features list, good handling and performance CONS Loss of detail when enlarged, poor ISO 1600 performance, no redeye fix	On paper, the S7c has almost everything you need on a point-and-shooter, and delivers as long as you don't enlarge the images too much	84%	TESTED JAN 2007
	Canon A630	£170 (£270 rrp)	8 Mega Pixels	35-140mm f/2.8-4.1	Program Aperture Shutter Manual Custom 13 Scene	Auto 80-800	Yes 2.5	SD AA	109 x 66 x 49.1mm 245g		Canon continues to improve on its popular A range, with this model offering a vari-angle LCD and a host of photographic controls		NOT YET TESTED
	Sony W70	£170 (£250 rrp)	7 Mega Pixels	38-114mm f/2.8-5.6	Program Auto 7 Scene	Auto 100-1000	Yes 2.5	MS 58 U	89 x 57 x 23mm 157g	PROS ISO range, handling, viewfinder CONS Some noise at high ISO, a bit bland, video	Smart, simple and effective, though the video mode is disappointing	85% What Digital Camera RECOMMENDED	TESTED SEP 2006
	Nikon S500	£175 (£250 rrp)	7 Mega Pixels	35-105mm f/2.8-4.7 Stabilised	Auto 15 Scene	Auto 50-2000	No 2.5	SD 20 U	88 x 51 x 22mm 150g	PROS Great design, anti-reflective LCD, vibration reduction CONS Bland zoom range, noise above ISO 400	A great-looking camera, producing good images at low ISO settings with a reasonable price tag	87% What Digital Camera RECOMMENDED	TESTED JAN 2007

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

VIEW ALL TESTED CAMERAS 360° AT WWW.WHATDIGITALCAMERA.COM

				LENS	EXP MODES	ISO	VIEW/LCD (in)	MEMORY/BATT	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Pentax W30	£180 (£200 rrp)	7 Mega Pixels	38-114mm f/3.3-4	Auto Program 25 Scene	Auto 64-3200	No 2.5	SD 21 LI	54 x 107.5 x 23.5mm 140g	PROS Waterproof, ease of use, noise control CONS Design, average performance	Unfortunately the W30 doesn't quite qualify as a camera for all-round usability, but it is easy to use and if you will utilise its waterproof capabilities then it's definitely worth a look.	80%	TESTED SEP 2007
	Samsung i70	£180 (£200rrp)	7 Mega Pixels	38-114mm f/3.5-4.5	Auto Program 11 Scene	Auto 80-1000	No 3	SD 10 LI	89.7 x 61 x 21.5mm 186g	PROS Abberation control, operational speed, useful features CONS Unnecessary extras, soft images, handling	There's no doubt a small demographic will appreciate the i70's novelty value and multi-purpose functionality but, as is the case with a lot of all-in-one's, the i70's doesn't particularly excel in any area	81%	TESTED SEP 2007
	Canon IXUS i7	£180 (£250rrp)	7 Mega Pixels	38-90mm f/3.2-5.4	Auto Manual 13 Scene	Auto 80-1600	No 1.8	SD LI	96.1 x 45.1 x 23.9mm 105g	PROS Face detection, compact design, easy to use CONS Low-light performance, relatively high RRP	This stylish compact is great for snaps on the go. More-ambitious photographers should look higher up the IXUS range	84%	TESTED MAR 2007
	Kodak V705	£180 (£260 rrp)	7 Mega Pixels	23mm f/2.8 39-117mm f/3.9-4.4	Auto Custom 20 Scene	Auto 50-1000	No 2.5	SD 32 LI	101 x 50 x 20mm 124g	PROS Ultra wide angle lens, slim-line, user friendly CONS No viewfinder, over-processed images, fiddly body controls	With a dual lens offering a super wide 23mm option, this is an intuitive and easy to use point-and-shooter that'll suit photographers seeking an enhanced focal range	84%	TESTED JUL 06
	Olympus Mju 740	£180 (£180 rrp)	7 Mega Pixels	36-180mm f/3.3-5	Auto 23 Scene	Auto 80-1600	No 2.5	xD 17 LI	96 x 54 x 24mm 114g		LOOK OUT FOR OUR REVIEW IN NEXT MONTH'S ISSUE		COMING SOON...
	Nikon S6	£180 (£350rrp)	6 Mega Pixels	35-105mm f/3-5.4	Program 4Subject 11 Scene	Auto 50-400	No 3	SD 20 LI	101 x 60 x 21mm 140g	PROS Nice design, good AF, WiFi CONS LCD hard to see in bright light, limited control, expensive	This WiFi enabled model is a pretty performer boasting features that appeal to the more tech-savvy user rather than the photographer	86% What Digital Camera RECOMMENDED	TESTED JAN 2006
	Pentax T30	£180 (£200 rrp)	7 Mega Pixels	38-113mm f/2.7-5.2	Auto Program 11 Scene	Auto 64-3200	No 3.0	SD LI	95 x 57 x 19mm 120g	PROS User-friendly layout, plenty of useful features, large LCD CONS Loss of detail, fiddly buttons, not a great improvement over its predecessor	Great features and simple to use, but image quality though good, isn't the greatest	84%	TESTED JAN 2007
	Olympus Mju 725 SW	£180 (£300rrp)	7 Mega Pixels	38-114mm f/3.5-5	Program 25 Scene	Auto 80-1600	No 2.5	xD LI	91 x 59 x 20mm 149g	PROS Solid build and feel, shockproof and waterproof CONS Fringing, lens flare, noise, camera shake, price	Outwardly desirable, but pictures lack punch. Still, when dropped from arm level, the camera gives hope to the butter-fingered by coming back for more	84%	TESTED DEC 2006
	Panasonic FX30	£180 (£280 rrp)	7 Mega Pixels	28-100mm f/2.8-5.6	Auto Program 20 Scene	Auto 100-3200	No 2.5	SD 27 LI	94.9 x 51.9 x 22 mm 132g	PROS Mega OIS, size, design, ease of use CONS No major upgrade	There hasn't been much in terms of improvements in the FX30, but this is largely due to previous models' competence. If you want a good-looking compact with a wideangle lens that takes cracking photos, you'd be hard pushed to find better than the FX30	90% What Digital Camera GOLD AWARD	TESTED SEP 2007
	Pentax A30	£185 (£200 rrp)	10 Mega Pixels	38-114mm f/2.8-5.4	Auto Program Shutter 15 Scene	Auto 64-3200	No 2.5	SD 22 LI	57.5 x 89.5 x 23.5mm 150g		The best of both worlds: compact body with a greater degree of manual control, as well as Shake Reduction and a 10MP sensor		MAY'07 TESTED
	Samsung NV10	£185 (£280 rrp)	10 Mega Pixels	35-105mm f/2.8-5.1	Program Manual 11 Scene	Auto 100-1000	No 2.5	SD 20 LI	96 x 60 x 19mm 149g	PROS Superb operating speed, great build and handling, looks CONS Noise levels/ 'mushy' detail, no aperture or shutter priority modes	Samsung's NV10 is exquisitely made, beautiful to look at and a real joy to use – it's such a shame the image quality doesn't quite match the design	86% What Digital Camera RECOMMENDED	TESTED FEB 2007
	Olympus FE-250	£185 (£200 rrp)	8 Mega Pixels	35-105mm f/2.8-4.7	Program Auto 15 Scene	Auto 64-3200	No 2.5	xD 20 LI	94 x 57 x 17mm 115g	PROS Size, simplicity, image quality at low ISO CONS Noise at higher ISO settings, navigation issues	The FE-250 doesn't pretend to be anything it isn't and what it does it does well. It's diminutive size and exposure options make it a winner, with the only concerns being with the highest ISO settings and a few difficulties with menu navigation	87% What Digital Camera RECOMMENDED	TESTED SEP 2007
	Canon IXUS 70	£185 (£250 rrp)	7 Mega Pixels	35-105mm f/2.8-4.9	Auto Manual 12 Scene	Auto 80-1600	Yes 2.5	SD LI	85.9 x 53.5 x 19.4mm 125g	PROS Beautiful design, fast AF and image review, colour accent feature CONS Image softness in edge of frame, lacks the specification of similar cameras	While the IXUS 70 may seem pricey for its specification, the design and build are excellent and make it worth every penny	88% What Digital Camera RECOMMENDED	TESTED JUN'07
	Samsung S1050	£185 (£300 rrp)	10 Mega Pixel	38-190mm f/2.8-4.4	Program Aperture Shutter Manual Auto 11 Scene	Auto 80-1600	No 3.0	SD AA	105 x 64 x 26mm 204g		A 3in LCD and NV style black finish help this 10MP point-and-shooter stand out from the crowd		MAY'07 TESTED
	Samsung L74	£195 (£229 rrp)	7 Mega Pixels	28-101mm f/2.8-5.6	Auto Program 11 Scene	Auto 80-1600	No 3	SD 450 LI	104.5 x 61.8 x 21.8mm 174g	PROS 28mm wideangle lens, lens design CONS Image quality, bulky body, poor touch-screen LCD	Bulky body and temperamental touch-screen disappoint with the L74	78%	TESTED JUL 2007
	Canon IXUS 75	£195 (£280 rrp)	7 Mega Pixels	37-111mm f/2.8-4.9	Auto Manual 17 Scene	Auto 80-1600	No 3	SD LI	92 x 57 x 20mm 130g	PROS Noise control, ISO range, speed of operation CONS Fringing, small buttons	An ideal accompaniment for a night out or just for general use, the IXUS 75 is a slim, no-nonsense compact with a good ISO range and a nice large LCD screen – a couple of trivial issues are more than compensated for by great images and speed	85% What Digital Camera RECOMMENDED	TESTED SEP 2007
	Olympus Mju 730	£195 (£280 rrp)	7 Mega Pixels	38-114mm f/3.5-5	Auto Program 20 Scene	Auto 80-3200	No 3	xD 22 LI	96 x 62 x 21mm 130g	PROS Image quality, sturdy, weatherproof build CONS No viewfinder, poor zoom control, slow performance	Another good-quality compact from Olympus. It's not especially cheap or fast, but the Mju 730 gives attractive images	81%	TESTED JAN 2007
	Sony T20	£200 (£250 rrp)	8 Mega Pixels	38-114mm f/3.5-4.3	Auto Program 8 Scene	Auto 80-3200	No 2.5	MS 31 LI	89.7 x 55.7 x 22.8mm 127g		Great ISO range and a slim, sexy body make this the ideal camera to take on a night out		MAY'07 TESTED
	Nikon P3	£200 (£350 rrp)	8 Mega Pixels	36-126mm f/2.7-5.3 Stabilised	Program Aperture Auto 16 Scene	Auto 50-400	No 2.5	SD LI	92 x 61 x 31mm 170g	PROS Chunky and easy to hold, well exposed and well focused results CONS Unnecessary WiFi feature?	This is a lovely little camera that's been hijacked by the latest 'trend accessory' – WiFi – which is a questionable addition	84%	TESTED JAN 2006
	Canon A570 IS	£200 (£230 rrp)	7 Mega Pixels	35-140mm f/2.6-5.5	Program Aperture Shutter Manual Auto 19 Scene	Auto 80-1600	Yes 2	SD AA	89.5 x 64.3 x 42.8mm 175g	PROS Optical IS, above average zoom, image quality CONS Mode dial, screen resolution	Fantastic images and a range of manual control make the A570 IS a suitable compromise between a standard compact and a bridge camera. If you need something with a little more zoom, then the A710 IS features a similar spec but with a 6x optical zoom	88% What Digital Camera RECOMMENDED	TESTED SEP 2007

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS Pro Dealers for over 35 Years

				LENS	EXP MODES	ISO	VIEW/LCD (in)	MEMORY/BATT	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Samsung NV7 OPS	£200 (£300 rrp)	7 Mega Pixels	38-270mm f/2.8-4 Stabilised	Program Aperture Shutter Manual 11 Scene	Auto 100-1000	No 2.5	SD U	106 x 62 x 21mm 245g	PROS Gorgeous design, Optical Picture Stabilisation, attractive price CONS Prefer a slightly wider zoom, noisy images, mushy detail	A top spec and great build/design is undermined by second-rate image quality that screams out for a Raw capture option	87% What Digital Camera RECOMMENDED	TESTED FEB 2007
	Canon A640	£200 (£330 rrp)	10 Mega Pixels	35-140mm f/2.8-4.1	Auto Program Aperture Shutter Manual 14 Scene	Auto 80-800	Yes 2.5	SD AA	109 x 66 x 49mm 245g	PROS Sharp images, vari-angle LCD, ultra reliable white balance and metering CONS Some fringing, no image stabilisation, poor battery life with alkaline cells	The A640 delivers a generally comparable feature set to the G7 and, while its images are noisier, they also appear sharper. Arguably a nicer camera than the G7	86% What Digital Camera RECOMMENDED	TESTED JAN 2007
	Canon A710 IS	£200 (£300 rrp)	7 Mega Pixels	35-210mm f/2.8-4.8 Stabilised	Auto Program Aperture Shutter Manual 17 Scene	Auto 80-800	Yes 2.5	SD AA	98 x 67 x 41mm 210g	PROS Metering and auto WB accuracy, wide range of shooting modes, zoom range and IS CONS Would like a flip-out LCD, power hungry	A fully featured model with image-stabilised 6x zoom to prevent camera shake and full manual control should you need it	89% What Digital Camera RECOMMENDED	TESTED APR 2007
	Sony T10	£200 (£249rrp)	7 Mega Pixels	38-114mm f/3.5-4.3	Program 9 Scene	Auto 80-1000	No 2.5	MS U	90 x 55 x 21mm 140g	PROS SuperSteadyShot, compact design and internal zoom, image quality with low ISO CONS AF with low light/low contrast, weak flash, touch expensive	Point-and-shoot simplicity, stylish looks and a sensible spec make this a good all-rounder	83%	TESTED MAR2007
	Casio EX-V7	£200 (£300 rrp)	7 Mega Pixels	38-266mm f/3.4-5.6	Program Aperture Shutter Manual Best Shot	Auto 64-800	No 2.5	SD 11 U	95.5 x 59.8 x 25.5mm 149g	PROS Design, menu system CONS Image quality, price	The feature-laden EX-V7 impresses in design and use, but is let down by poor image quality	80%	TESTED JUL 2007
	Samsung i7	£200 (£269 rrp)	7 Mega Pixels	38-114mm f/3.5-4.5	Auto Program 15 Scene	Auto 80-1600	No 3	SD U	101 x 60 x 22mm 185g		With its 3in rotating screen and touch-screen technology, the i7 is the gadget fan's dream camera		NOT YET TESTED
	Panasonic FZ8	£200 (£300 rrp)	7 Mega Pixels	36-432mm f/2.8-3.1	Program Aperture Shutter Manual 20 Scene	Auto 100 - 3200	Yes 2.5	SD U	113 x 72 x 79mm 310g	PROS RAW option, Mini-DSLR styling, speed of use CONS Aggressive noise reduction, a little too small for some	The FZ8 has a feature-set suited to a wide range of applications, and as an 'all-rounder' it's definitely one to consider. Best stick to low ISO settings though	88% What Digital Camera RECOMMENDED	TESTED APR 2007
	Nikon S50c	£200 (£260 rrp)	7 Mega Pixels	38-114mm f/3.3-4.2	15 Scene	Auto 100-1600	No 3	SD 13 U	93 x 59 x 21mm 125g	PROS Optical Vibration Reduction, image quality, wide ISO range CONS Wi-fi has minimal benefit, awkward menus, LCD screen quality, plastic multi-selector	Despite a few shortcomings, the S50c has a lot to recommend it, its image quality in particular. If the Wi-Fi option isn't something you envisage using, then going for the S50 model instead will save you money.	84%	TESTED AUG 2007
	Ricoh R6	£205 (£330rrp)	7 Mega Pixels	28-200mm f/3.3-5.1	Auto 12 Scene	Auto 64-1600	No 27	SD 54 U	99 x 55 x 23.3mm 135g		The slimmest compact camera on the market with a 28-200mm optical zoom also features face-recognition, anti-shake and a 2.7in LCD		NOT YET TESTED
	Olympus Mju 750	£205 (£300 rrp)	7 Mega Pixels	36-180mm f/3.3-5.0	Auto 23 Scene	Auto 80-1600	No 2.5	xD 17 U	96 x 54 x 24.3mm 120g		Olympus brings a 5x optical zoom to its Mju range with its 750 model		NOT YET TESTED
	Sony T50	£210 (£270 rrp)	7 Mega Pixels	38-114mm f/3.5-4.3 Stabilised	Program 10 Scene	Auto 80-1000	No 3	MS 56 U	95 x 57 x 23mm 130g		Another of Sony's good looking T series cameras, this one features high ISO and Super Steady Shot image stabilisation as well as a touch-sensitive 3in LCD		NOT YET TESTED
	Olympus Mju 1000	£210 (£275 rrp)	10 Mega Pixels	35-105mm f/2.8-4.7	Program Auto 20 Scene	Auto 64-6400	No 2.5	xD 28 U	97 x 56 x 23mm 140g	PROS Solid weatherproof body, comes with a 1GB xD card, price CONS Overly noisy at all ISO settings, inconsistent WB, not the fastest AF	While the price and specifications are definitely right, the Mju 1000 is let down by iffy white balance and exposure, plus high noise levels throughout the ISO range	86% What Digital Camera RECOMMENDED	TESTED FEB 2007
	Panasonic TZ2	£215 (£270 rrp)	6 Mega Pixels	28-280mm f/3.3-4.9	Auto 21 Scene	Auto 100-3200	No 2.5	SD U	105 x 59.2 x 36.7mm 222g		The same fantastic zoom range as the TZ1 but with a wide-angle lens		NOT YET TESTED
	Canon IXUS 900Ti	£220 (£349 rrp)	10 Mega Pixels	37-111mm f/2.8-4.9	Auto Manual 11 Scene	Auto 80-3200	Yes 2.5	SD U	91 x 60 x 28mm 165g	PROS Excellent build and styling, fast AF, superb white balance and metering CONS Lacks 'true' wide-angle, Noise	A fantastic camera to use, but this doesn't outweigh the high noise and low detail delivered by a sensor that has more pixels than it needs	84%	TESTED APR 2007
	Sony T100	£225 (£330 rrp)	8 Mega Pixels	35-175mm f/3.5-4.4	Program 9 Scene	Auto 80-3200	No 3	MS 31 U	91.8 x 59.2 x 22.3mm 141g		Sony's new 'must-have' model. 5x optical zoom plus a 3in LCD. Available in black, red and silver		NOT YET TESTED
	Nikon S10	£225 (£300 rrp)	6 Mega Pixels	38-380mm f/3.5 Stabilised	Auto 14 Scene	Auto 50-800	No 2.5	SD 16 AA	67 x 26 x 67mm 220g	PROS VR mode, face detection, versatile handling, good level of image quality, optical ability CONS Unwieldy body style, poor zoom control	The S10 provides a good-value compromise between compact and superzoom. User friendly and versatile, it combines crisp, reliable imaging with quality features	85% What Digital Camera RECOMMENDED	TESTED TEST06
	Canon IXUS 850 IS	£225 (£370rrp)	7 Mega Pixels	28-105mm f/2.8-5.8 Stabilised	Auto Manual 10 Scene	Auto 80-1600	Yes 2.5	SD U	89 x 58 x 25mm 150g	PROS Speed of use, stylish design, image stabilisation, superb WB and metering CONS Lack of image detail, noise at 1600, corner softness/fringing at 28mm	A beautiful camera to use, with plenty of creative options for the enthusiast. At lower ISO settings and modest print sizes it's a stunner, but it struggles at higher ISOs	88% What Digital Camera RECOMMENDED	TESTED FEB 2007
	Nikon P5000	£230 (£330 rrp)	10 Mega Pixels	36-126mm f/2.7-5.3	Program Aperture Shutter Manual 15 Scene	Auto 64-3200	Yes 2.5	SD U	98 x 65 x 41mm 200g	PROS Vibration reduction, comprehensive feature set, good price CONS No Raw mode, would prefer an all-metal body	With a DSLR-style feature-set, the Coolpix P5000 looks like a great all-rounder and an alternative to Canon's G7	86% What Digital Camera RECOMMENDED	TESTED JUN 2007
	Canon S3 IS	£230 (£450 rrp)	6 Mega Pixels	36-432mm f/2.7-3.5 Stabilised	Program Aperture Shutter Manual Auto 14 Scene	Auto 80-800	Evf 2	SD AA	113 x 78 x 76mm 410g	PROS Well-made body, good features and zoom. Capable of excellent results CONS Some minor fringing, no Raw, poor EVF, a larger sensor would reduce noise	A very nice camera indeed – well made, good features and specs, and capable of some fantastic results	89% What Digital Camera RECOMMENDED	TESTED JUL 2006
	Sony N2	£240 (£350 rrp)	10 Mega Pixels	38-114mm f/2.8-5.4	Auto Program Manual 8 Scene	Auto 100-1600	No 3	MS 25 U	97 x 61 x 23mm 151g	PROS Touch screen, solid construction CONS Low-resolution preview, limited zoom	Aside from the touch-screen LCD, the Sony N2 is nothing special. A short zoom range and mediocre images let it down	81%	TESTED JAN 2007

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

VIEW ALL TESTED CAMERAS 360° AT WWW.WHATDIGITALCAMERA.COM

				LENS	EXP MODES	ISO	VIEW/LCD (IN)	MEMORY/BATT	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Panasonic TZ3	£245 (£300 rrp)	7 Mega Pixels	28-280mm f/3.3-4.9	Auto 21 Scene	Auto 100-3200	No 3	SD 12 LI	105 x 59.2 x 36.7mm 232g	PROS 28mm wide-angle zoom, 16:9 panoramic shooting, operating speed CONS Aggressive noise reduction	With a sensible resolution and sensor size combined with a useful wide zoom, the TZ3 ticks a lot of the right boxes. Only niggle is the slightly aggressive image processing, but other than that it's a cracker	89% What Digital Camera RECOMMENDED	TESTED MAY 2007
	Casio EX-Z1200	£245 (£280 rrp)	12 Mega Pixels	37-111mm f/2.8-5.5	Auto Best Shot	Auto 50-3200	No 2.8	SD 11 LI			A good selection of focusing and metering modes add to a 12MP sensor to create a high-spec compact		NOT RETESTED
	Samsung NV11	£250 (£300 rrp)	10 Mega Pixels	38-190mm f/2.8-4.4	Program Aperture Shutter Manual Auto 11 Scene	Auto 80-1600	No 2.7	SD LI	107 x 64 x 22mm 195g		LOOK OUT FOR OUR REVIEW IN NEXT MONTH'S ISSUE		COMING SOON...
	Sony H7	£250 (£330 rrp)	8 Mega Pixels	31-465mm f/2.7-4.5	Program Aperture Shutter Manual Auto 9 Scene	Auto 80-3200	Evf 2.5	MS 31 LI	109.5 x 83.4 x 85.7mm 375g		Essentially the same camera as the H9 (see below) but with a smaller fixed LCD screen and no Nightshot mode		NOT YET TESTED
	Canon IXUS 950 IS	£260 (£330 rrp)	8 Mega Pixels	35-140mm f/2.8-5.5	Auto Manual 12 Scene	Auto 80-1600	Yes 2.5	SD LI	90.4 x 56.5 x 26.4mm	PROS Image quality, start-up and shooting time, design and handling CONS Heavy, somewhat overpriced	The IXUS 950 IS continues the tradition of the IXUS brand in delivering quality, but the price tag is somewhat prohibitive considering it doesn't offer a lot more than the much cheaper IXUS 70 and 75 models	87% What Digital Camera RECOMMENDED	TESTED SEP 2007
	Fujifilm S9600	£270 (£300 rrp)	9 Mega Pixels	28-300mm f/2.8-4.9	Program Aperture Shutter Manual Auto 5 Scene	Auto 80-1600	Evf 2	xD/ CF AA	128 x 93 x 29mm 650g	PROS Zoom range, flash sync socket, AA batteries CONS No optical image stabilisation, aggressive noise reduction	The Fujifilm S9600 is not a bad camera, but it doesn't bring anything new to the bridge camera genre	86% What Digital Camera RECOMMENDED	TESTED MAR 2007
	Olympus Mju 770 SW	£270 (£300 rrp)	7 Mega Pixels	38-114mm f/3.5-5	Program 23 Scene	Auto 80-1600	No 2.5	xD 18 LI	92 x 59 x 21mm 155g	PROS Metal body capable of taking all kinds of abuse, great design, large and bright LCD CONS Slightly noisy at the higher end of the ISO scale	Another world first from Olympus. This Mju is waterproof to 10m, shockproof from 1.5m, freezeproof to -10C and crushproof to 100kg. Ideal for clumsy fat Eskimos then!	88% What Digital Camera RECOMMENDED	TESTED MAY 2007
	Olympus SP 550UZ	£280 (£375 rrp)	7 Mega Pixels	28-504mm f/2.8-4.5 Stabilised	Program Aperture Shutter Manual Auto 23 Scene	Auto 50-5000	Evf 2.5	xD 20 AA	116 x 79 x 78mm 365g	PROS Zoom range, DSLR style features, ergonomic rubberised grip CONS Slow writing Raw files, noisy images	There are numerous superzoom cameras on the market, but none matches the Olympus SP-550UZ's zoom range and if you can accept the slightly high noise levels it's certainly one worth considering	86% What Digital Camera RECOMMENDED	TESTED MAY 2007
	Panasonic FX100	£280 (£330 rrp)	12 Mega Pixels	28-100mm f/2.8-5.6	Auto 23 Scene	Auto 80-6400	No 2.5	SD 27 LI	96.7 x 54 x 24.5mm 148g	PROS Mega OIS lens stabilisation, 'Easy-zoom' feature, build and design CONS A bit pricey for the 'point-and-shoot' spec, colours can be a bit drab, overly aggressive noise reduction	Great image quality and gorgeous design make the FX100 another winner in Panasonic's line-up	86% What Digital Camera RECOMMENDED	TESTED AUG 2007
	Sony W200	£280 (£330 rrp)	12 Mega Pixels	35-105mm f/2.8-5.5	Auto Program 9 Scene	Auto 100-3200	Yes 2.5	MS 31 LI	91.0 x 58.5 x 27.3mm 142g		Cramming 12MP into a slim body, the W200 also features a HD-TV output		NOT YET TESTED
	Canon G7	£290 (£450 rrp)	10 Mega Pixels	35-210mm f/2.8-4.8 Stabilised	Program Aperture Shutter Manual Auto 17 Scene	Auto 80-1600	Yes 2.5	SD LI	106 x 72 x 43mm 320g	PROS Metal body gives solid build, stabilised zoom covers most purposes, exposures are spot on CONS No Raw, combined with problems resolving fine detail and noise	This model improves on the G6 in almost every way, but is let down by image quality and a lack of Raw. Fewer pixels and a Raw mode would have made this the ultimate digital compact	85% What Digital Camera RECOMMENDED	TESTED JAN 2007
	Panasonic FZ50	£300 (£500 rrp)	10 Mega Pixels	35-420mm f/2.8-3.7	Program Aperture Shutter Manual Auto 16 Scene	Auto 80-3200	Evf 2	SD LI	141 x 86 x 142mm 734g	PROS Image quality, lens, speed, manual functions CONS Electronic viewfinder lag, size, noise at high ISO	Offers a high-value alternative for those who don't have the desire or means to invest in a DSLR	85% What Digital Camera RECOMMENDED	TESTED NOV 2006
	Sony H9	£300 (£380 rrp)	8 Mega Pixels	31-465mm f/2.7-4.5	Program Aperture Shutter Manual Auto 9 Scene	Auto 80-3200	Evf 3	MS 31 LI	109.5 x 83.4 x 85.7mm 407g	PROS 3in tilting LCD screen, 15x optical zoom, ergonomic design CONS No Raw mode, aggressive fringing, small and sluggish evf	With its fantastic 3in tilting LCD screen and zoom range, the H9 no doubt satisfies the needs of its target market	85% What Digital Camera RECOMMENDED	TESTED AUG 2007
	Canon S5 IS	£320 (£440 rrp)	8 Mega Pixels	36-432mm f/2.7-3.5	Program Aperture Shutter Manual Auto 13 Scene	Auto 80-1600	Evf 2.5	SD 32 AA	117 x 80 x 77.7mm 450g		LOOK OUT FOR OUR REVIEW IN NEXT MONTH'S ISSUE		COMING SOON...
	Ricoh GR-D	£350 (£400 rrp)	8 Mega Pixels	28mm f/2.4	Program Aperture Manual Auto 2 Scene	Auto 64-1600	No 2.5	SD LI	107 x 58 x 25mm 170g	PROS Great specification, flexible controls, excellent lens CONS Noise at higher ISOs, lack of critical sharpness on JPEGs	The lens and camera build are great, but you need to shoot Raw for best results. It's a unique offering for the purist	87% What Digital Camera RECOMMENDED	TESTED FEB 2006
	Sony G1	£350 (£450 rrp)	6 Mega Pixels	38-114mm f/3.5-4.3	Program 10 Scene	Auto 80-1000	No 3.5	MS 2G LI	93.3 x 71.7 x 25.3mm 204g		A whopping 2GB internal memory and a huge 3.5in screen makes this set to be a winner		NOT YET TESTED
	Ricoh GX100	£350 (£400 rrp)	10 Mega Pixels	24-72mm f/2.5-4.4	Program Aperture Manual 8 Scene	Auto 80-1600	Evf 2.5	SD 26 LI/ AA	112 x 58 x 25mm 220g	PROS Raw shooting, 24mm wide-angle setting, 'My Settings' function CONS Noisy images (but sharp!), long-winded menu system	Raw shooting along with a removable electronic viewfinder and sharp images make the GX100 the best high-end compact camera currently on the market	90% What Digital Camera GOLD AWARD	TESTED JULY 2007
NEW	Sanyo HD2	£350 (£500 rrp)	7 Mega Pixels	38-380 mm f/3.5	Program Aperture Shutter Manual Auto 6 Scene	Auto 50-1600	No 2.2	SD LI	77.5 x 35 x 117.5mm 185g		LOOK OUT FOR OUR REVIEW IN NEXT MONTH'S ISSUE		COMING SOON...
	Leica D-Lux 3	£480 (£490 rrp)	10 Mega Pixels	28-112mm f/2.8-4.9 Stabilised	Program Aperture Shutter Manual Auto 17 Scene	Auto 100-1600	No 2.8	SD LI	106 x 58 x 26mm 185g	PROS 16:9 image ratio, body design, leather case CONS Mushy details and colour loss at ISO 400, expensive	You're paying for the brand but it's a good-quality camera	83%	TESTED TBC 06
	Ricoh 500 SE	£550 (£550 rrp)	8 Mega Pixels	28-85mm f/2.5-4.3	Auto 5 Scene	tbc	Yes 2.5	SD 26 LI / AA	133 x 78.5 x 74mm 430g		Built like a tank, the 500SE is a heavy-duty outdoor camera with automatic GPS co-ordinate embedding. WiFi version also available		NOT YET TESTED

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS Pro Dealers for over 35 Years

Everything you need to know to help you make the right choice

What Digital SLR

The digital SLR market is currently enjoying a sales boom, and cameras are now more affordable than ever.

The letters 'SLR' stand for 'single lens reflex' and refer to the viewing system, in which light passes through the lens, is bounced off a 45° mirror, and into the prism where it is turned right-way-round for viewing (so the viewer sees what the lens is seeing). The D in DSLR simply stands for digital. The most distinguishable feature of SLRs (though it isn't unique to them) is that the lenses are interchangeable, enabling the user to fit lenses designed for specific tasks. Hundreds of lenses are available (see Lens listing, p140) along with dozens of other specialised accessories such as flashguns, battery packs and remote triggers. There are other benefits of DSLR ownership, such as better image quality and response times, burst shooting and user control.

BUYING ADVICE: CHOOSING AN SLR

Rule One: Try before you buy!

We would never recommend buying any digital camera without holding it first, but this is especially the case with a working tool such as an SLR. If you already have a 35mm model with some lenses, you may want to stick with that brand, but it's also worth at least considering trading in and starting again. Read all the information on these pages, browse the listings that follow and narrow down your choice to perhaps two or three that fit your needs and budget, then go somewhere that you can compare them side by side. It's also worth checking the *WDC* forums and our Insider's Guide for feedback from existing users. Finally, buy the full test report for any camera featured here, or the back issue in which it appeared, to read all our comments in full.

KEY: THE LISTINGS EXPLAINED

	Samsung GX-IL	£400 (£550 rrp) Body Only	6 Mega Pixels CCD 23.5 x 15.7mm	P	PASM Auto 6 Sc	RAW JPEG	200 - 3200	G/N 15.6 ISO 200	Pentamirror 96% Coverage	2.5in LCD 230k pixels	SD	125x93 x 67mm 470g	PROS Good image quality, ease of use, speed CONS Slight fringing, depth of field preview	The GX-1L is getting a bit long in the tooth now, but for the DSLR buyer on the most frugal of budgets, it's easy to use, compact, and capable of producing good results	88% What Digital Camera RECOMMENDED	TESTED MAY 06
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

1 NEW/OLD MODELS
Brand new products that haven't yet been tested are indicated by a **NEW** in yellow beside the camera.

2 PRICE
A Average street price
B RRP at launch
C Body Only or Kit

3 SENSOR
A Number of pixels
B Sensor type (CCD, CMOS etc)
C Sensor dimensions

4 LENS MOUNT
C = Canon
F = Four-Thirds
N = Nikon
P = Pentax
S = Sigma
A = Sony Alpha

5 EXPOSURE MODES
P = Program
A = Aperture Priority
S = Shutter Priority
M = Manual
Sc = Scene Modes

6 FILE FORMATS
JPEG, RAW
RAW+JPEG, TIFF

7 ISO RANGE
Min to Max

8 FLASH
Guide Number in metres

9 VIEWFINDER
A Type
B Coverage

10 LCD SCREEN
Size
Resolution

11 MEDIA
CF= CompactFlash
SD= Secure Digital
xD= xD Picture Card

12 DIMENSIONS
Length x Height x Depth

13 PROS & CONS
What we like
What we don't

14 COMMENTS
Additional information

15 RATING
Out of 100%

AWARDS
Recommended (Silver) or Gold Award

16 TESTED
Date of the issue this test appeared in

What Digital Camera GOLD AWARD
GOLD AWARD
For scores over 90%

What Digital Camera RECOMMENDED
RECOMMENDED AWARD
For scores over 85%

PARK CAMERAS
Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

Here are some key features to consider:

Low light capability /ISO speed →

If you're likely to want to shoot in low light, whether it's sunset landscapes or cosy jazz clubs, good low light performance is a must. Most DSLRs can shoot at ISO 1600 and some go to ISO 3200, but performance varies a lot between different cameras.

← Image stabilisation

Also known as anti-shake or vibration reduction, this is either built into the lenses (Nikon, Canon, Panasonic) or into the camera itself (sensor-based, eg. Sony, Pentax, Samsung). Though it's considered that lens-based stabilisation is slightly better, it ties you into buying pricier lenses to get the benefit; sensor-based stabilisation works with any lens.

Burst mode/frame rate →

Particularly important for action and wildlife photographers is the ability to fire off a number of images in quick succession. Even the most basic DSLRs now boast a frame rate of 2.5fps but some are much faster. A good buffer memory is important; it's where images are stored before they're saved. The larger this is, the more images you can shoot before it fills and the camera grinds to a (temporary) halt. Raw files, being bigger, fill the buffer quicker than JPEGs.

← Anti-dust

Every time you change the lens on your DSLR, tiny dust particles can enter the exposed lens mount and land on your sensor, appearing as annoying marks on your pictures. Dust is also created by wear and tear of the moving parts inside the camera. Most manufacturers have a dust removal system that cleans the sensor in one way or another except Nikon, who argue that it isn't a big issue.

Customisation →

One of the benefits of SLRs is the degree of customisation they allow. Choose which dials control which features, or decide whether you want to shoot JPEG, Raw or both at the same time. Do you want the file numbers to start again when you reload a card or carry on where they left off? Control how your picture looks too in your choice of colour space, in-camera sharpening and other parameters.

What Digital Camera

Need to Know

These factors are equally important in your choice of digital SLR

Digital SLR cameras offer numerous advantages over compacts. Their direct optical viewing system lets you see the image as the lens sees it, their interchangeable lenses and extensive range of accessories let you customise it to suit any type of subject, their larger sensors provide better quality images with lower noise levels, and their processing power enables super-fast focusing and shooting at multiple frames per second. Choosing which one to buy though is less straightforward. Here are some key considerations to make.

CAMERA SIZE

Digital SLRs vary greatly in size and weight. On paper you might think that the smaller the better. Your chiropractor would certainly say so. But some people, especially those with big hands or long fingers, find small cameras difficult to hold and the controls too fiddly to access. In fact, many small camera owners add a battery grip afterwards to make it bigger. On the other hand, small cameras are more likely to be taken along on trips than big, heavy ones. Decide whether you're a small camera or big camera person before buying.

SENSOR TYPE

Many people use the term CCD to describe their camera's sensor but in fact the CCD is just one of several types of sensor technology in common use. Canon uses CMOS sensors, Panasonic has LiveMOS, Fuji uses its own SuperCCD and Sigma uses Foveon chips. All have pros and cons, but all are capable of producing great results, so don't base your choice of camera on this factor alone.

PIXELS SCHMIXELS

As with compacts, don't obsess about the number of pixels a DSLR camera has. The more pixels are squeezed into a given space, the smaller they have to be, and this causes problems such as noise. Our tests show that 6 million pixel SLRs can produce A3 prints as good as those from some 10MP models. Quality is dependent on a whole range of factors, of which the number of pixels is just one.

SYSTEMS & LENSES

Each manufacturer uses a different mount for attaching lenses. They are Canon EF, Nikon F, Pentax K (also used by Samsung), Sigma and Four-Thirds (used by Olympus, Panasonic and Leica), Sony Alpha (formerly Minolta) – none of which are compatible with one another. Although no one mount is better than any other, once you pick one you're locked into the system unless you sell your entire kit. So choose your camera well. If you already have a 35mm SLR system it may be tempting to stick with the same brand, especially if you own several lenses. While this may be the cheapest option, new lens technology means you may get better results from the new generation of digital lenses. Your decision should be based on how discerning you are about image quality, versus the depths of your pockets.

BUILD QUALITY

The main difference between expensive professional SLRs and entry-level enthusiast ones is the build quality. Pro cameras are built to withstand knocks, scrapes and inclement weather, which makes them bigger, heavier and costlier. If you don't need this level of engineering put the extra money towards more or better lenses instead.

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS Pro Dealers for over 35 Years

			SENSOR	LENS MOUNT	EXP MODES	FILE FORMAT	ISO	FLASH	VIEWFINDER	SCREEN	MEMORY	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Pentax K100D	£300 £550 rrp Kit	6.1 Mega Pixels CCD 23.5x 15.7mm	P	PASM Auto 14 Sc	Raw JPEG	200 - 3200	GN 15.6 ISO 200	Pentamirror 96% Coverage	2.5in LCD 210k pixels	SD	130x 93x 70mm 560g	**PROS** Good AF, build, noise control, stabilisation **CONS** Tends to underexpose, ugly menu	A solid camera that builds on the legacy of the Pentax *ist D and its derivatives by adding CCD-based image stabilisation. Can produce the goods if handled with care	83%	TESTED NOV 2006
	Nikon D40	£350 £500 rrp Kit	6.1 Mega Pixels CCD 23.7 x 15.6mm	N	PASM Auto 8 Sc	Raw JPEG Raw+	200 - 3200	GN 12 ISO 100	Reflex 95% Coverage	2.5in LCD 230k pixels	SD/ SD HC	126x 64x 94mm 475g	**PROS** Excellent noise control and image quality **CONS** Basic AF system	Delivers point-and-shoot simplicity with advanced manual settings to grow into. May lack the resolution of some other models, but images are sharp and noise free, so they enlarge well	87% What Digital Camera RECOMMENDED	TESTED JAN 2007
	Pentax K110D	£375 £550 rrp Kit	6.1 Mega Pixels CCD 23.5x 15.7mm	P	PASM Auto 14 Sc	RAW JPEG	200- 3200	GN 15.6 ISO 200	Pentamirror 96% Coverage	2.5in LCD 210k pixels	SD	130x 93x 70mm 485mm		Essentially the same camera as the Pentax K100D, with the only thing separating them being the CCD-based anti-shake – the K110D has it, the K100 doesn't		NOT YET TESTED
	Samsung GX-1L	£400 £550 rrp Kit	6 Mega Pixels CCD 23.5x 15.7mm	P	PASM Auto 6 Sc	Raw JPEG	200 - 3200	GN 15.6 ISO 200	Pentamirror 96% Coverage	2.5in LCD 210k pixels	SD	125x 93x 67mm 470g	**PROS** Good image quality, ease of use, speed **CONS** Slight fringing, depth of field preview	The GX-1L is getting a bit long in the tooth now, but for the DSLR buyer on the most frugal of budgets it's easy to use, compact, and capable of producing some good results	88% What Digital Camera RECOMMENDED	TESTED MAY 2006
	Nikon D40X	£450 £599 rrp Kit	10 Mega Pixels CCD 23.6x 15.8mm	N	PASM Auto 8 Sc	Raw JPEG Raw+	100- 3200	GN 12 ISO 100	Pentamirror 95% Coverage	2.5in LCD 230k pixels	SD	126x 64x 94mm 495g	**PROS** On screen 'help', features, frame rate **CONS** Soft images, slower flash sync speed than D40	Essentially a 10MP D40 that produces slightly softer images that go unnoticed up to A3 print sizes. Trying to fill a gap between the D40 and D80, but is there a gap there?	87% What Digital Camera RECOMMENDED	TESTED MAY 2007
	Canon EOS 400D	£480 £650 rrp Kit	10 Mega Pixels CMOS 22.2 x 14.8mm	C	PASM Auto 9 Sc	Raw JPEG Raw+	100 - 1600	GN 13 ISO 100	Pentamirror 95% Coverage	2.5in LCD 230k pixels	CF	127 x 94x 65mm 545g	**PROS** Compact, build quality, dust reduction **CONS** Chroma noise, position of DOF preview button	Good-value upgrade that offers plenty of improvements on the world's best-selling DSLR – the EOS 350D. Enhancements include a more sophisticated AF system and CCD-based dust reduction	89% What Digital Camera RECOMMENDED	TESTED DEC 2006
	Samsung GX-1S	£500 £750 rrp Kit	6.1 Mega Pixels CCD 23.5x 15.7mm	P	PASM Auto 11 Sc	Raw JPEG	200 - 3200	GN 15.6 ISO 200	Pentaprism 95% Coverage	2.5in LCD 210k pixels	SD	125x 93x 67mm 505g	**PROS** Excellent range of options, compact **CONS** Some exposure / focusing issues	A good all-round shooter with a high ISO 3200 sensitivity. Starting to look a little dated and a lack of 'unique' features mean it's unlikely to make waves in the DSLR market	85% What Digital Camera RECOMMENDED	TESTED JUNE 2006
	Sony Alpha 100	£500 £600 rrp Kit	10 Mega Pixels CCD 23.6x 15.8mm	A	PASM Auto 6Sc	Raw JPEG Raw+	100 - 1600	GN 12 ISO 100	Pentamirror 95% Coverage	2.5in LCD 230k pixels	CF	133x 71x 95mm 545g	**PROS** Image stabilisation, good images, image noise control **CONS** Shutter noise, slight oversaturisation	Some excellent features recommend Sony's first SLR effort, not least a 10MP sensor and anti-shake technology inherited from Konica Minolta's Dynax 5D	87% What Digital Camera RECOMMENDED	TESTED AUG 2006
	Olympus E-410	£500 £550 rrp Kit	10 Mega Pixels MOS 17.3x 13mm	F	PASM Auto 20 Sc	Raw JPEG Raw+	100- 1600	GN 12 ISO 100	Reflex 95% Coverage	2.5in LCD 230k pixels	CF xD	129.5x 91 x 53mm 375g	**PROS** Excellent noise control, small and light, live-view mode **CONS** Highlights blow easily, limited burst depth	Fantastic upgrade from the E-400. Improvements to the sensor, outstanding noise reduction and the addition of live-view make it a great all-round package at a fantastic price	87% What Digital Camera RECOMMENDED	TESTED AUG 2007
	Nikon D80	£530 £900 rrp Kit	10 Mega Pixels CCD 23.6x 15.8mm	N	PASM Auto 6 Sc	Raw JPEG Raw+	100 - 1600	GN 13 ISO 100	Pentaprism 95% Coverage	2.5in LCD 230k pixels	SD	132 x 103 x 77mm 585g	**PROS** Handling, controls, excellent image quality **CONS** Need a fast PC to quickly open image files	A worthy successor to the D70 which takes much of its technology – and image quality – from the D200, but puts it in a lower-cost body. WDC's Best Product of the Year 2006	91% What Digital Camera GOLD AWARD	TESTED OCT 2006
	Olympus E-330	£550 £900 rrp Kit	7.5 Mega Pixels CMOS 17.3x 13mm	F	PASM 20Sc	Raw JPEG TIFF	100 - 1600	GN 13 ISO 100	Panomirror 95% Coverage	2.5in LCD 215k pixels	CF xD	140x 87x 72mm 550g	**PROS** Live viewing, overall handling, anti-dust **CONS** Image noise over ISO 400, no PC socket	The pull-out live-view LCD is the first of its kind and impressive, while the 7.5MP sensor is a marked improvement over the 5MP sensor used in the earlier E-300. Unconventional looks don't appeal to everyone though	86% What Digital Camera RECOMMENDED	TESTED APR 2006
	Samsung GX10	£550 £650 rrp Kit	10 Mega Pixels CCD 23.5x 15.7mm	P	PASM Auto Sv TAv 6Sc	Raw JPEG	100 - 1600	GN 11 ISO 100	Pentaprism 95% Coverage	2.5in LCD 230k pixels	SD/ SD HC	142x 101 x 73mm 710g	**PROS** Great spec, great build, great price **CONS** Occasional WB /exposure issues	The high-end spec and build quality has never before been seen at this price and if you're happy to shoot Raw and work on your images it will deliver superb results. The two-year warranty is a bonus too	90% What Digital Camera GOLD AWARD	TESTED MAR 2007
	Olympus E-510	£600 £600rrp Kit	10 Mega Pixels CCD 17.3x 13mm	F	PASM Auto 18 Sc	Raw JPEG Raw+	100- 1600	GN 12 ISO 100	Reflex 95% Coverage	2.5in LCD 230k pixels	CF xD	136x 91.5 x 56mm 460g	**PROS** Excellent noise control, dual mode image stabilisation **CONS** Limited dynamic range, SHQ JPEG burst depth rate	A high-resolution 10MP sensor that delivers largely noise-free images, and all the secondary features you're ever likely to need or use, the E-510 is currently the definitive Four Thirds DSLR.	90% What Digital Camera GOLD AWARD	TESTED SEP 2007
	Pentax K10D	£600 £750 rrp Kit	10 Mega Pixels CCD 23.5x 15.7mm	P	PASM Auto Sv TAv	Raw JPEG	100 - 1600	GN 11 ISO 100	Pentaprism 95% Coverage	2.5in LCD 230k pixels	SD/ SD HC	142x 101 x 70mm 710g	**PROS** Great spec, great build, great price **CONS** Occasional WB / exposure issues	Essentially the same camera as Samsung's GX10, so the same sentiments apply. You get 12 months less on the guarantee with the Pentax model, though	90% What Digital Camera GOLD AWARD	TESTED MAR 2007
	Canon EOS 30D	£700 £1200 rrp Body Only	8 Mega Pixels CMOS 22.5x 15mm	C	PASM Auto 6 Sc	Raw JPEG Raw+	100 - 3200	GN 13 ISO 100	Pentaprism 95% Coverage	2.5in LCD 230k pixels	CF	144 x 106 x 74mm 700g	**PROS** Specs, build, low image noise, better LCD **CONS** Images a little flat, handling, DOF placement	Good solid camera that replaces the popular EOS 20D. The upgrades are evolutionary rather than revolutionary, but it still shouldn't disappoint the more experienced Canon user	87% What Digital Camera RECOMMENDED	TESTED MAY 2006

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.Park Cameras.com/wdc for LOW Prices & Superb Service

VIEW ALL TESTED CAMERAS 360° AT WWW.WHATDIGITALCAMERA.COM

			SENSOR	LENS MOUNT	EXP MODES	FILE FORMAT	ISO	FLASH	VIEWFINDER	SCREEN	MEMORY	SIZE / WEIGHT	PROS & CONS	SUMMARY	SCORE	
	Nikon D200	£870 £1300 rrp Body Only	10 Mega Pixels CCD 23.6x 15.8mm	N	PASM	Raw JPEG	100 - 1600	GN 12 ISO 100	Pentaprism 95% Coverage	2.5in LCD 230k pixels	CF	147 x 113 x 74mm 830g	PROS Design, speed, handling CONS LCD brightness, JPEGS often need processing	Very capable all-rounder targeting the enthusiast / professional market. Offers lots of potential, but is geared to Raw rather than JPEG capture. Winner of the 2006 WDC awards '£1,000+ DSLR' category	90% What Digital Camera GOLD AWARD	TESTED FEB 2006
	Fujifilm S5 Pro	£980 £1500 rrp Body Only	12 Mega Pixels CCD 23x 15.5mm	N	PASM	Raw JPEG Raw+	100 - 3200	GN 12 ISO 100	Pentaprism 95% Coverage	2.5in LCD 230k pixels	CF	147 x 113 x 74mm 830g	PROS Extended dinamic range, minimal noise, solid build CONS Limited buffer, slightly soft JPEGs	Fuji's S5 Pro incorporates the company's proprietary Super CCD SR Pro sensor to expand the dynamic range. A new processor and two-stage noise reduction work well to keep images clean across the ISO range	88% What Digital Camera RECOMMENDED	TESTED APR 2007
	Sigma SD14	£1000 £1099 rrp Body Only	14 Mega Pixels Foveon CCD 20.7 x 13.8mm	S	PASM	Raw JPEG	100 - 1600	GN 11 ISO 100	Pentaprism 95% Coverage	2.5in LCD 150k pixels	CF	144 x 107 x 81mm 700g	PROS Build quality, design, dust protector CONS Weak AF, inconsistent white balance, poor LCD	A sound metering system but unpredictable white balance, AF inaccuracies, a poor LCD screen and overly soft images combine to make this one of the worst DSLR's we've tested yet	79%	TESTED JUN 2007
	Panasonic L1	£1400 £1500 rrp Kit	7.5 Mega Pixels MOS 17.3x 13mm	F	PASM	Raw JPEG	100 - 1600	GN 10 ISO 100	Panominor 95% Coverage	2.5in LCD 207k pixels	SD / SD HC	146 x 87 x 80mm 530g	PROS Fun handling, especially for traditionalists CONS Still limited system at the moment	One of the most 'traditional' handling experiences to be offered by a DSLR which includes the use of a lens-based aperture ring. Worth considering, particularly if you're new to automated cameras	85% What Digital Camera RECOMMENDED	TESTED OCT 2006
	Canon EOS 5D	£1550 £2500rrp Body Only	12.8 Mega Pixels CMOS 35.8x 23.9mm	C	PASM Auto	Raw JPEG Raw+	100 - 1600	No	Pentaprism 96% Coverage	2.5in LCD 230k pixels	CF	152 x 113 x 75mm 810g	PROS Well built, good features, speed of use, images CONS Some fiddly controls, faint fringing	From pros to enthusiasts the EOS 5D's full-frame sensor lets you get the most from your wide-angle lenses. There are mixed reports of quite severe vignetting though – some cameras seem to do it, others don't	91% What Digital Camera GOLD AWARD	TESTED DEC 2005
	Leica Digilux 3	£1790 £1790 rrp	7.5 Mega Pixels MOS 17.3x 13mm	F	PASM	Raw JPEG	100 - 1600	GN 10 ISO 100	Panominor 95% Coverage	2.5in LCD 207k pixels	SD/ SD HC	146 x 87 x 80mm 530g		A result of the Panasonic / Leica partnership, the Digilux 3 is essentially the Panasonic L1 in Leica clothing. It costs more than the L1, but the resale value should be higher too		NOT YET TESTED
	Nikon D2HS	£2000 £2500rrp Body Only	4 Mega Pixels CCD 23.3 x 15.5mm	N	PASM	Raw JPEG TIFF	200 - 1600	No	Pentaprism 100% Coverage	2.5in LCD 232k pixels	CF	158 x 150 x 86mm 1,070g	PROS Handling, image quality, system support, speed CONS 4MP may not be enough	The D2HS has a very singular purpose – to be fast enough for the most demanding sports photographer, and rugged enough to stand the test of time. The 4MP CCD limits its general usability though	90% What Digital Camera GOLD AWARD	TESTED OCT 2005
	Nikon D2XS	£2480 £3500rrp Body Only	12 Mega Pixels CMOS 23.5 x 19.1mm	N	PASM	Raw JPEG	100 - 3200	No	Pentaprism 100% Coverage	2.5in LCD 230k pixels	CF	158 x 150 x 86mm 1,070g	PROS Build, image quality CONS Single card slot, buffer memory could be faster	A fine example of optical and digital technology combined. A choice of high-speed, 6MP capture or high-resolution 12MP capture means it offers something for everyone – from the studio to the sports stadium	95% What Digital Camera GOLD AWARD	TESTED NOV 2006
	Canon EOS-1D MKII N	£2700 £3050rrp Body Only	8.2 Mega Pixels CMOS 28.7 x 19.1mm	C	PASM	Raw JPEG Raw+	100 - 3200	No	Pentaprism 100% Coverage	2.5in LCD 230k pixels	CF SD	156 x 158 x 80mm 1,225g	PROS Build, image quality, fast, good buffer rate CONS Expensive compared to competition	The EOS 1D MkII N is a good camera, but not really a significant upgrade option if you've got the original EOS 1D. However, if you want a fast EOS with a decent resolution, look no further	91% What Digital Camera GOLD AWARD	TESTED MAR 2006
	Canon EOS-1D MK III	£3000 £3049rrp Body Only	10.1 Mega Pixels CMOS 28.1 x 18.7mm	C	PASM	Raw JPEG Raw+	50 – 6400	No	Pentaprism 100% Coverage	3in LCD 230k pixels	CF SD	156 x 157 x 80mm 1,155g		The EOS 1D MkIII is a revolutionary upgrade of the MkII, boasting a 10fps drive rate for 110 JPEG frames, a 3in LCD with a genuinely useable 'live view' mode and an ISO range increase in both directions – looks great		NOT YET TESTED
	Canon EOS-1Ds MK II	£4470 £6000rrp Body Only	16.7 Mega Pixels CMOS 36x 24mm	C	PASM	Raw JPEG Raw+	100 - 1600	No	Pentaprism 100% Coverage	2.0in LCD 230k pixels	CF SD	156 x 158 x 80 1,215g	PROS Superb image quality, camera body design CONS None really, but larger LCD would be nice	Quite simply, as good as it gets. The full-frame sensor and high resolution complement each other perfectly and the image quality is superb. Canon has another scorcher	96% What Digital Camera GOLD AWARD	TESTED APR 2005

Test Reports

Buying a new camera or lens?

www.testreports.co.uk/photography/wdc

Here you will find EVERY single test ever featured in What Digital Camera, available for IMMEDIATE download. All tests cost £3.00.

If you would like to write to OTC, our address is: OTC Ltd, PO Box 288, Hatfield, AL10 0YH

*All printed tests will be supplied as black and white copies

EACH INDIVIDUAL TEST COSTS JUST £3.00

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff

PARK CAMERAS Pro Dealers for over 35 Years

There are nearly 300 lenses out there but which to choose? Start here!

What Lens

Your DSLR probably came with a lens in the 18-55mm or 18-70mm range (or 14-45mm if you bought an Olympus). In 35mm terms all these lenses start at the equivalent of around 25-28mm wideangle and reach their maximum zoom at between 75mm and 100mm.

Depending on what subjects you like to shoot, you may want to expand your options with a wideangle or telephoto, or upgrade to better-quality lenses. There's a huge number to choose from and so far we've only tested a few of them, but we'll be testing a handful every month from now on, so keep reading WDC for updates.

BUYING ADVICE: CHOOSING A LENS

Digital versus Analogue lenses

If you've got lenses from your old 35mm SLR you may be tempted to keep them for your DSLR, rather than buy new digital lenses. In fact there are several advantages to upgrading to new optics. The first is that because digital sensors are smaller, the circular image the lens produces can be reduced in diameter, so the lenses themselves can be smaller and lighter. Secondly, with some older lenses, the light exiting the rear optic strikes the sensor at an acute angle which, because sensors are 'bumpy' not smooth, causes optical problems such as fringing. Digital lenses are designed so that light strikes the sensor as straight on as possible, which can make a big difference to the image quality.

KEY: THE LISTINGS EXPLAINED

SIGMA	70mm	£325	f/2.8	EX DG	ACNPS	76x95mm/525g	No	62mm	Macro	84%	June 06
	1	2	3	4	5	6	7	8	9	10	

1. **FOCAL RANGE** – The focal length or focal length range covered by the lens
2. **PRICE** – Manufacturer's RRP
3. **MAX APERTURE** – Maximum aperture
4. **DESIGNATION** – APO, VR etc (see Jargon Buster)
5. **LENS MOUNTS** – A= Sony Alpha; C= Canon; F= Four-Thirds; N= Nikon; P= Pentax; S= Sigma
6. **SIZE & WEIGHT** – LengthxDiameter / Weight
7. **DIGITAL ONLY** – 'No' means it can also be used with 35mm/ full-frame sensors
8. **THREAD** – Filter size
9. **COMMENTS** – Further information
10. **SCORES** – Score out of 100%
    - * Recommended
    - * Gold Award

WDC issue test date

BUYING A LENS: JARGON BUSTER

Aperture: The adjustable bladed opening in the lens which lets the light through. The smaller it is, the less light gets to the sensor.
APO: Apochromatic – lens elements designed to produce sharper images by focusing all wavelengths of light to the same point.
Barrel distortion: When straight lines in an image bow outwards.
ED: Extra low dispersion glass – produces higher contrast/less flare.
Flare: Bright streaks/polygons on images caused by non-image forming light causing internal reflections. Use of a lens hood reduces this.
Fringing: Purple lines around the edges of high-contrast edges in pictures. A problem especially affecting cheaper and non-digital optics.
IF: Internal focusing – the lens doesn't get longer as you focus, nor does the front element rotate.
IS: Image Stabilisation – Canon's lens-based anti-shake technology.
Pincushion distortion: When straight lines in a shot bow inwards.
Vignetting: A darkening in the corners of the image.
VR: Vibration Reduction – Nikon's lens-based anti-shake technology.

Types of lens

Most lenses fall into one of these categories

Fixed focal length

Fixed lenses offer some advantages over zooms. They're generally smaller and lighter, with wider maximum apertures and superior image quality. An ultra-fast (eg f/1.8) 50mm lens is perfect for low light, 85-105mm is ideal for portraits while a fast 300mm (or longer) tele is a popular addition to any wildlife or sports shooter's kit.

Standard zoom

Most DSLRs come with a standard zoom; that is, one which spans from moderate wideangle to short telephoto. These 'kit' lenses are generally fine for most purposes but there are alternatives that offer superior image quality and/or wider maximum apertures – at a price premium, of course.

Wideangle zoom

Wideangles make subjects seem further away, enabling you to get more in the shot. Among the most popular wideangle zooms are the 10-20mm/12-24mm and 17-35mm ranges. Superwide lenses cause more distortion, especially when tilted off the perpendicular but, with care, can be used to create a great sense of drama.

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

We choose the best of the best lenses

This Month's Picks

TAMRON 17-50mm

Why we love this lens...

A constant aperture of f/2.8 and internal focusing combine with outstanding optical performance to produce a good-value lens with only a few niggles. Ideal as a kit-lens replacement.

PENTAX 50mm f/2.8

Why we love this lens...

Boasting macro, a solid construction and a handy focus clamp, as well as being relatively light-weight, Pentax's 50mm is sharp throughout its aperture range with minimal fringing and is worth every penny.

CANON 28-135mm

Why we love this lens...

Image-stabilisation, a USM motor, useful range, sharp pictures, inexpensive... the list goes on, as Canon continues to impress with its 28-135mm lens.

What Digital Camera Need to Know

LENS MOUNTS

Each camera manufacturer has their own lens mount and they aren't compatible with one another. If you own a Canon, for example, you can't use Nikon lenses, though you can use independent brands such as Sigma and Tamron – if you get them in the right mount.

MAGNIFICATION FACTOR

If you're migrating from a 35mm SLR, your lenses won't provide the same field of view on a DSLR unless you have a 'full-frame' model such as Canon's EOS 5D. For Nikon, Pentax, Fuji and Sony DSLRs magnify the focal length by 1.5x to get the 35mm equivalent (eg a 100mm lens becomes 150mm); for Canon it's 1.6x; Sigma is 1.7x; and the Four-Thirds mount, 2.0x.

MAXIMUM APERTURE

You pay a premium for lenses with wider maximum apertures but for many users they're worth it. Wider apertures mean you can use faster, motion-stopping shutter speeds, and shoot handheld in available light with less camera shake. Zooms whose maximum apertures are fixed throughout the range (instead of getting smaller as you zoom) also cost more.

35MM COMPATIBILITY

Most digital sensors are smaller than 35mm, which is why lenses designed for digital can be smaller than those designed for 35mm. Although pre-digital lenses can be used on digital SLRs they may not perform as well, due to their optical characteristics. Lenses designed solely for digital sensors, however, can't be used on 35mm cameras (or digital SLRs with 35mm-sized sensors) because the image they produce isn't big enough in diameter to cover the sensor/film, causing severe vignetting.

ANTI-SHAKE

It's impossible to hold a camera dead steady without support, but at the faster shutter speeds our shakiness isn't noticeable in pictures. As the shutter speed drops though, our pictures become progressively less 'crisp' until they're downright blurry. Optical Image Stabilisation (used by Canon) and Vibration Reduction (Nikon) uses a floating element inside the lens and a gyroscope to cancel out our body movement. It's effective enough to give us two or three extra stops of extra shutter speeds to play with before shake becomes visible. Some cameras (eg Sony, Pentax and Samsung) use a moving sensor instead, so IS/VR lenses aren't necessary.

BUILT-IN FOCUS MOTOR

Some lenses incorporate a motor within the lens to drive the auto focusing, while others are powered by motors within the camera. Lenses with their own motors will generally focus more quickly than those without. Some cameras, such as the Nikon D40, don't have a built-in focus motor so in these cases you can only use lenses that have their own. Canon brands its lens motors USM (Ultrasonic Motor), Sigma calls its HSM (Hypersonic Motor) and Nikon's are called Sonic Wave.

Telephoto zoom

Telephotos make subjects appear closer. They're great for sport and wildlife where you can't get close, while short teles are good for portraits. Telephotos magnify camera shake, so consider one with Image Stabilisation if your camera doesn't have it, or a wide maximum aperture.

Superzooms

Want a one-lens solution for your photography? Get a superzoom. While they rarely compare with shorter range lenses in image quality, a 18-200mm type lens offers the benefit of speed, convenience and a dust-free sensor. Good for general shooting at moderate print sizes.

Macro lenses ↓

Many lenses misleadingly sport the 'macro' moniker but a true dedicated macro lens lets you get close enough to reproduce your subject at life-size (or half life-size) on the sensor. Macro lenses (few of which zoom) come in a range of focal lengths from standard to telephoto.

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS
Pro Dealers for over 35 Years

			MIN APERTURE	DESIGNATION	MOUNT	SIZE & WEIGHT	DIGITAL ONLY	FILTER THREAD	COMMENT	SCORES	
CANON	10-22mm	£475	f/3.5-4.5	USM	C	84x90mm/385g	Yes	77mm	Ultrasonic motor	80%	Mar 07
CANON	14mm	£1498	f/2.8	L USM	C	77x89mm/560g	No	n/a	Pro-spec L lens		
CANON	15mm	£529	f/2.8	FE	C	73x63mm/330g	No	n/a	Fisheye		
CANON	16-35mm	£1199	f/2.8	L USM	C	84x103mm/600g	No	77mm	Pro-spec L lens		
CANON	17-40mm	£549	f/4	L USM	C	84x97mm/400g	No	77mm	High-quality wide-zoom	89% *	May 07
CANON	17-55mm	£779	f/2.8	IS USM	C	84x111mm/645g	Yes	77mm	Image stabilisation		
CANON	17-85mm	£429	f/4-5.6	IS USM	C	79x93mm/475g	Yes	67mm	Image stabilisation		
CANON	18-55mm	£150	f/3.5-5.6	II	C	69x66mm/190g	Yes	58mm	Standard EF-S kit lens	77%	Apr 07
CANON	20mm	£335	f/2.8	USM	C	78x71mm/405g	No	72mm	Ultrasonic motor		
CANON	20-35mm	£279	f/3.5-4.5	USM	C	84x69mm/340g	No	77mm	Nice wide zoom	89% *	June 05
CANON	24mm	£1045	f/1.4	L USM	C	84x78mm/550g	No	77mm	Pro-spec L lens		
CANON	24mm	£315	f/2.8	-	C	68x49mm/270g	No	58mm	Small and lightweight		
CANON	24-70mm	£879	f/2.8	L USM	C	84x124mm/950g	No	77mm	Pro-spec L lens		
CANON	24-85mm	£255	f/3.5-4.5	USM	C	73x70mm/380g	No	67mm	Ultrasonic motor		
CANON	24-105mm	£769	f/4	L IS USM	C	84x107mm/670g	No	77mm	Image stabilisation		
CANON	28mm	£139	f/2.8	-	C	67x43mm/185g	No	52mm	Budget lightweight lens		
CANON	28mm	£329	f/1.8	USM	C	74x56mm/310g	No	58mm	Ultrasonic motor		
CANON	28-80mm	£50	f/3.5-5.6	II	C	67x71mm/220g	No	58mm	Micro motor		
CANON	28-90mm	£95	f/4-5.6	III	C	67x71mm/190g	No	58mm	Lightweight zoom		
CANON	28-105mm	£115	f/4-5.6	-	C	67x68mm/220g	No	58mm	Micro USM II motor		
CANON	28-105mm	£150	f/4-5.6	USM	C	67x68mm/220g	No	58mm	Ultrasonic motor		
CANON	28-105mm	£199	f/3.5-4.5	II USM	C	72x75mm/375g	No	58mm	Ultrasonic motor		
CANON	28-135mm	£369	f/3.5-5.6	IS USM	C	78x97mm/540g	No	58mm	Superb all-rounder	90% *	June 05
CANON	28-200mm	£279	f/3.5-5.6	USM	C	78x90mm/500g	No	58mm	Ultrasonic motor		
CANON	28-300mm	£1799	f/3.5-5.6	L IS USM	C	92x184mm/1670g	No	77mm	Image stabilisation		
CANON	35mm	£939	f/1.4	L USM	C	79x86mm/580g	No	72mm	Pro-spec L lens		
CANON	35mm	£189	f/2	-	C	68x43mm/210g	No	52mm	Fast standard lens		
CANON	50mm	£1099	f/1.2	L USM	C	86x66mm/580g	No	72mm	Pro-spec L lens		
CANON	50mm	£269	f/1.4	USM	C	74x51mm/290g	No	58mm	Ultrasonic motor		
CANON	50mm	£80	f/1.8	II	C	68x41mm/130g	No	52mm	Lightest EF lens in range		
CANON	50mm	£225	f/2.5	EF	C	68x63mm/280g	No	52mm	Macro (1/2 life size)		
CANON	60mm	£300	f/2.8	EF-S USM	C	73x70mm/335g	Yes	52mm	Great 'true' macro lens	88% *	Aug 06
CANON	55-200mm	£189	f/4.5-5.6	II USM	C	70x97mm/310g	No	52mm	Ultrasonic motor		
CANON	70-200mm	£1249	f/2.8	L IS USM	C	86x197mm/1570g	No	77mm	Image stabilisation		
CANON	70-200mm	£549	f/4	L USM	C	76x172mm/310g	No	67mm	Pro-spec L lens		
CANON	70-300mm	£959	f/4.5-5.6	DO IS USM	C	82x100mm/720g	No	58mm	Image stabilisation		
CANON	75-300mm	£139	f/4-5.6	III	C	71x122mm/480g	No	58mm	Useful zoom range		
CANON	75-300mm	£149	f/4-5.6	III USM	C	71x122mm/480g	No	58mm	Average performance	77%	Sept 07
CANON	85mm	£1459	f/1.2	L II USM	C	93x84mm/1025g	No	72mm	Excellent portrait lens	88% *	Aug 06
CANON	85mm	£279	f/1.8	USM	C	75x72mm/425g	No	72mm	Ultrasonic motor		
CANON	90-300mm	£125	f/4.5-5.6	-	C	71x115mm/420g	No	58mm	Lightweight zoom		
CANON	90-300mm	£209	f/4.5-5.6	USM	C	71x115mm/420g	No	58mm	Ultrasonic motor		
CANON	100mm	£309	f/2	USM	C	75x74mm/460g	No	58mm	Ultrasonic motor		
CANON	100mm	£470	f/2.8	USM	C	79x119mm/600g	No	58mm	1:1 Macro (life size)	87% *	Aug 06
CANON	100-300mm	£259	f/4.5-5.6	USM	C	73x122mm/540g	No	58mm	Ultrasonic motor		
CANON	100-400mm	£1098	f/4.5-5.6	L IS USM	C	92x189mm/1380g	No	77mm	Pro-spec L lens		
CANON	135mm	£288	f/2.8	SF	C	69x98mm/390g	No	52mm	Soft-focus		
CANON	180mm	£1100	f/3.5	L USM	C	83x187mm/1090g	No	72mm	Tele macro		
CANON	200mm	£559	f/2.8	L II USM	C	83x136mm/765g	No	72mm	Pro-spec L lens		
CANON	300mm	£2999	f/2.8	L IS USM	C	128x252mm/2550g	No	Drop-in	Pro-spec L lens		
CANON	300mm	£979	f/4	L IS USM	C	90x221mm/1190g	No	77mm	Pro-spec L lens		
CANON	400mm	£5999	f/2.8	L IS USM	C	163x349mm/5370g	No	Drop-in	Pro-spec L lens		
CANON	400mm	£3899	f/4	DO IS USM	C	128x233mm/1940g	No	Drop-in	Image stabilised		
CANON	400mm	£979	f/5.6	L USM	C	90x265mm/1250g	No	77mm	Pro-spec L lens		
CANON	500mm	£4899	f/4	L IS USM	C	146x387mm/3870g	No	Drop-in	Image stabilised		
CANON	600mm	£5849	f/4	L IS USM	C	168x456mm/5360g	No	Drop-in	Image stabilised		
LEICA	14-50mm	£TBC	f/2.8-3.5	D	F	78x103mm/490g	Yes	72mm	Stabilised 4/3 lens		
LEICA	14-150mm	£TBC	f/3.5-5.6	D ASPH	F	78x90mm/520g	Yes	72mm	Stabilised 4/3 lens		
LEICA	25mm	£TBC	f/1.4	D ASPH	F	78x75mm/525g	Yes	62mm	Fast four-thirds lens		
LEICA	10.5mm	£489	f/2.8	DX ED G	N	63x63mm/305g	Yes	n/a	Fisheye		
LEICA	12-24mm	£769	f/4	DX ED G IF	N	83x90mm/465g	Yes	77mm	ED glass	86% *	Mar 07
NIKON	14mm	£1199	f/2.8	D ED	N	87x87mm/670g	No	n/a	ED glass		
NIKON	16mm	£549	f/2.8	D	N	63x57mm/290g	No	n/a	Fisheye		
NIKON	17-35mm	£1249	f/2.8	D ED IF	N	83x106mm/745g	No	77mm	ED glass		
NIKON	17-55mm	£989	f/2.8	DX ED G IF	N	86x111mm/755g	Yes	77mm	ED glass	86% *	May 07
NIKON	18mm	£1199	f/2.8	D	N	82x58mm/380g	No	77mm	Ultra-wide fast lens		
NIKON	18-35mm	£369	f/3.5-4.5	D ED IF	N	83x83mm/370g	No	77mm	ED glass		
NIKON	18-55mm	£149	f/3.5-5.6	DX ED G	N	69x74mm/210g	Yes	52mm	ED glass	82%	Apr 07
NIKON	18-70mm	£219	f/3.5-4.5	DX ED G IF	N	73x76mm/390g	Yes	67mm	Good standard zoom	87% *	June 05
NIKON	18-135mm	£279	f/3.5-5.6	DX ED G IF	N	74x87mm/385g	Yes	67mm	Good value zoom lens	87% *	June 07
NIKON	18-200mm	£519	f/3.5-5.6	DX ED G IF VR	N	77x97mm/560g	Yes	72mm	Great superzoom	89% *	June 06
NIKON	20mm	£369	f/2.8	D	N	69x43mm/270g	No	62mm	Close-range correction		
NIKON	24mm	£329	f/2.8	D	N	65x46mm/270g	No	52mm	Close-range correction		
NIKON	24-50mm	£375	f/3.3-4.5	D	N	68x74mm/355g	No	62mm	Lightweight zoom		
NIKON	24-85mm	£449	f/2.8-4	D IF	N	79x82mm/545g	No	72mm	Above average zoom	84%	June 05
NIKON	24-120mm	£479	f/3.5-5.6	ED G IF VR	N	77x94mm/575g	No	72mm	Vibration reduction		
NIKON	28mm	£179	f/2.8	D	N	65x45mm/205g	No	52mm	Standard wide lens		
NIKON	28-70mm	£149	f/2.8	D ED IF	N	89x122mm/935g	No	77mm	ED glass and IF		
NIKON	28-100mm	£139	f/3.5-5.6	G	N	68x80mm/245g	No	62mm	One aspherical element		
NIKON	28-200mm	£198	f/3.5-5.6	DG	N	70x71mm/360g	No	62mm	3 ED elements and IF		
NIKON	35mm	£229	f/2	D	N	65x44mm/205g	No	52mm	Fast lightweight lens		
NIKON	35-70mm	£529	f/2.8	D	N	72x95mm/665g	No	62mm	'Push-pull' type zoom		
NIKON	50mm	£249	f/1.4	D	N	65x43mm/230g	No	52mm	Fast portraiture lens		
NIKON	50mm	£99	f/1.8	D	N	64x49mm/155g	No	52mm	Fast lightweight lens		
NIKON	55-200mm	£179	f/4-5.6	DX ED G	N	68x79mm/255g	Yes	52mm	ED glass		
NIKON	55-200mm	£249	f/4-5.6	DX VR	N	73x99mm/355g	Yes	52mm	Offers plenty for the price	86% *	July 07
NIKON	60mm	£319	f/2.8	D	N	70x75mm/440g	No	62mm	Cracking macro	92% *	Aug 06
NIKON	70-200mm	£1299	f/2.8	ED G IF VR	N	87x215mm/1470g	No	77mm	Vibration reduction		
NIKON	70-300mm	£169	f/4-5.6	G	N	74x117mm/426g	No	62mm	Lightweight zoom lens	74%	June 05
NIKON	70-300mm	£398	f/4.5-5.6	ED G VR	N	80x143.5mm/745g	No	67mm	Dual mode VR		
NIKON	80-200mm	£798	f/2.8	D ED	N	87x187mm/1300g	No	77mm	Fast tele zoom	93% *	June 05
NIKON	80-400mm	£1099	f/4.5-5.6	D ED VR	N	91x171mm/1360g	No	77mm	Vibration reduction		
NIKON	85mm	£82	f/1.4	D IF	N	80x73mm/560g	No	77mm	Internal focusing		
NIKON	85mm	£279	f/1.8	D	N	72x59mm/380g	No	62mm	Rear focusing		
NIKON	105mm	£729	f/2	DC D	N	79x111mm/640g	No	72mm	Rear focusing		
NIKON	105mm	£899	f/2.8	ED G IF VR	N	83x116mm/790g	No	62mm	Macro and VR		
NIKON	135mm	£938	f/2	DC D	N	79x120mm/815g	No	72mm	Rear focusing		
NIKON	180mm	£598	f/2.8	ED IF	N	79x144mm/760g	No	72mm	ED glass		
NIKON	200mm	£2899	f/2	ED G IF VR	N	124x203mm/2900g	No	52mm	Vibration reduction		
NIKON	200mm	£1049	f/4	D ED IF	N	76x193mm/1190g	No	62mm	Macro and IF		
NIKON	200-400mm	£4599	f/4	ED G IF VR	N	124x365mm/3275g	No	52mm	Vibration reduction		
NIKON	300mm	£3299	f/2.8	ED G IF VR	N	124x267mm/2870g	No	52mm	Vibration reduction		
NIKON	300mm	£849	f/4	D ED IF	N	90x225mm/1440g	No	77mm	ED glass		
NIKON	400mm	£6299	f/2.8	D ED IF II	N	160x352mm/4440g	No	52mm	ED glass		
NIKON	500mm	£4899	f/4	D ED IF II	N	140x394mm/3430g	No	52mm	ED glass		
NIKON	600mm	£6799	f/4	D ED IF II	N	166x431mm/4750g	No	52mm	ED glass		
NIKON	20mm	£400	f/2.8	MF	N	65x43mm/250g	No	62mm	Manual focus		
NIKON	24mm	£300	f/2.8	MF	N	63x46mm/275g	No	52mm	Manual focus		
NIKON	28mm	£170	f/2.8	MF	N	63x45mm/250g	No	62mm	Manual focus		
NIKON	35mm	£480	f/1.4	MF	N	68x62mm/400g	No	62mm	Manual focus		
NIKON	50mm	£360	f/1.2	MF	N	69x48mm/960g	No	52mm	Manual focus		
NIKON	50mm	£230	f/1.4	AIS	N	62x40mm/250g	No	52mm	Manual focus		
NIKON	55mm	£220	f/2.8	MF	N	64x62mm/290g	No	52mm	Manual focus macro		
NIKON	85mm	£900	f/2.8	D MF	N	84x110mm/775g	No	77mm	Man. foc/tilt and shift		
OLYMPUS	7-14mm	£1199	f/4	-	F	87x120mm/780g	Yes	n/a	ED, Super ED and asph.		
OLYMPUS	8mm	£529	f/3.5	ED	F	79x77mm/485g	Yes	n/a	Splashproof fisheye		
OLYMPUS	11-22mm	£539	f/2.8-3.5	-	F	75x98mm/485g	Yes	72mm	Two aspherical elements		
OLYMPUS	14-42mm	£179	f/3.5-5.6	ED	F	66x61mm/190g	Yes	58mm	ED glass		
OLYMPUS	14-45mm	£170	f/3.5-5.6	-	F	71x87mm/285g	Yes	58mm	Standard kit lens	79%	Apr 07
OLYMPUS	14-54mm	£449	f/2.8-3.5	-	F	74x88mm/435g	Yes	67mm	Pro-spec zoom	84%	May 07
OLYMPUS	18-180mm	£350	f/3.5-6.3	ED	F	78x85mm/435g	Yes	62mm	Built-in CPU		
OLYMPUS	35mm	£149	f/3.5	-	F	71x53mm/165g	Yes	52mm	Macro		
OLYMPUS	35-100mm	£1050	f/2	-	F	97x214mm/1650g	Yes	77mm	Built-in CPU		
OLYMPUS	40-150mm	£198	f/3.5-4.5	-	F	77x107/425g	Yes	58mm	Good performer	84%	Sept 07
OLYMPUS	50mm	£360	f/2	-	F	71x62mm/300g	Yes	52mm	Fast macro lens	88% *	Aug 06
OLYMPUS	50-200mm	£898	f/2.8-3.5	-	F	87x157mm/1070g	Yes	67mm	Long-reaching zoom	91% *	June 05
OLYMPUS	90-250mm	£3799	f/2.8-3.5	ED	F	124x276mm/3270g	Yes	105mm	ED glass		
OLYMPUS	150mm	£1998	f/2	ED	F	100x150mm/1190g	Yes	82mm	ED + Super ED glass		
OLYMPUS	300mm	£4898	f/2.8	ED	F	129x281mm/190g	Yes	Drop-in	ED glass		
PENTAX	10-17mm	£369	f/3.5-4.5	DA ED IF	P	68x72mm/370g	Yes	n/a	Fisheye lens with IF		
PENTAX	12-24mm	£679	f/4	DA ED AL IF	P	84x88mm/430g	Yes	77mm	Internal focusing		
PENTAX	14mm	£889	f/2.8	DA ED IF	P	84x69mm/420g	Yes	77mm	ED glass and IF		
PENTAX	16-45mm	£349	f/4	DA ED AL	P	72x62mm/365g	Yes	67mm	ED glass		
PENTAX	16-50mm	£589	f/2.8	DA*	P	84x99mm/565g	Yes	77mm	Weatherproof		
PENTAX	18-55mm	£199	f/3.5-5.6	DA AL	P	68x68mm/225g	Yes	52mm	Good standard zoom	80%	Apr 07
PENTAX	21mm	£449	f/3.2	DA AL	P	63x25mm/140g	Yes	49mm	Limited edition		

PARK CAMERAS
Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

			MIN APERTURE	DESIGNATION	MOUNT	SIZE & WEIGHT	DIGITAL ONLY	FILTER THREAD	COMMENT	SCORES	
PENTAX	31mm	£899	f/1.8	FA AL	P	69x65mm/345g	No	77mm	Limited edition		
PENTAX	40mm	£249	f/2.8	DA	P	63x15mm/90g	Yes	45mm	Limited edition		
PENTAX	43mm	£440	f/1.9	FA	P	64x27mm/155g	No	49mm	Limited edition		
PENTAX	50mm	£399	f/2.8	DFA	P	68x60mm/265g	No	45mm	Macro	87% *	Aug 06
PENTAX	50-135mm	£650	f/2.8	DA*	P	77x136mm/765g	Yes	67mm	Weatherproof		
PENTAX	50-200mm	£179	f/4-5.6	DA ED	P	67x79mm/260g	Yes	52mm	Quick-shift focus system		
PENTAX	70mm	£449	f/2.4	DA	P	63x26mm/130g	Yes	49mm	Limited edition		
PENTAX	77mm	£629	f/1.8	DA	P	64x48mm/270g	Yes	45mm	Limited edition		
PENTAX	100mm	£449	f/2.8	DFA	P	68x81mm/345g	No	49mm	Macro	85% *	Aug 06
SAMSUNG	10-17mm	£330	f/3.5-4.5	D-XENON	P	68x72mm/320g	Yes	45mm	Fisheye zoom lens		
SAMSUNG	12-24mm	£550	f/4	D-XENON	P	84x88mm/430g	Yes	77mm	Ultra-wide zoom lens		
SAMSUNG	16-45mm	£350	f/4	D-XENON	P	72x92mm/365g	Yes	67mm	Quick-shift focus system		
SAMSUNG	18-55mm	£170	f/3.5-5.6	D-XENON	P	69x68mm/225g	Yes	52mm	Average kit lens	80%	Apr 07
SAMSUNG	35mm	£300	f/2	D-XENON	P	64x45mm/195g	Yes	49mm	Fast widerangle lens		
SAMSUNG	50-200mm	£200	f/4-5.6	D-XENON	P	67x79mm/255g	Yes	52mm	Useful focal range		
SAMSUNG	100mm	£400	f/2.8	D-XENON	P	68x81mm/345g	Yes	49mm	Macro		
SIGMA	8mm	£519	f/3.5	EX DG	ACNPS	74x69mm/400g	No	-	Fisheye		
SIGMA	8mm	£479	f/4	EX DG	ACNPS	74x63mm/320g	No	-	Fisheye		
SIGMA	10-20mm	£319	f/4-5.6	EX DC	ACNPS	84x81mm/465g	Yes	77mm	Pro-spec EX lens	79%	Mar 07
SIGMA	12-24mm	£499	f/4.5-5.6	EX DG	ACNPS	87x103mm/600g	No	-	Cracking wide zoom	90% *	June 05
SIGMA	14mm	£535	f/2.8	EX DG	ACNPS	83x91mm/630g	No	-	Pro-spec EX lens		
SIGMA	15mm	£388	f/2.8	EX DG	ACNPS	74x65mm/370g	No	-	Fisheye		
SIGMA	15-30mm	£260	f/3.5-4.5	EX DG	ACNPS	87x133mm/600g	No	-	Pro-spec EX lens		
SIGMA	17-35mm	£249	f/2.8-4	EX DG	ACNPS	84x89mm/560g	No	77mm	Pro-spec EX lens		
SIGMA	17-70mm	£259	f/2.8-4.5	DC	ACNPS	83x79mm/455g	Yes	72mm	Macro	88% *	July 06
SIGMA	18-50mm	£279	f/2.8	EX DC	ACNPS	74x84mm/445g	Yes	67mm	Pro-spec EX lens		
SIGMA	18-50mm	£388	f/2.8	EX DC	ACNPS	79x86mm/450g	Yes	72mm	Macro	88% *	May 07
SIGMA	18-50mm	£99	f/3.5-5.6	EX DC	ACNPS	68x62mm/250g	Yes	58mm	Standard zoom	81%	June 05
SIGMA	18-125mm	£209	f/3.5-5.6	DC	ACNPS	70x78mm/385g	Yes	62mm	Zoom with IF		
SIGMA	18-200mm	£279	f/3.5-6.3	DC	ACNP	70x78mm/405g	Yes	62mm	Two SLD elements		
SIGMA	18-200mm	£439	f/3.5-6.3	DC OS	ACNPS	79x100mm/610g	Yes	72mm	Optical Stabilisation		
SIGMA	20mm	£269	f/1.8	EX DG	ACNPS	86x90mm/520g	No	82mm	Pro-spec EX lens		
SIGMA	28-40mm	£249	f/2.8	EX DG	ACNP	89x108mm/600g	No	82mm	Pro-spec EX lens		
SIGMA	24mm	£229	f/1.8	EX DG	ACNPS	84x83mm/485g	No	77mm	Macro		
SIGMA	24-60mm	£289	f/2.8	EX DG	ACNP	84x87mm/550g	No	77mm	Above average zoom	86% *	June 05
SIGMA	24-70mm	£269	f/2.8	EX DG	ACNPS	89x116mm/715g	No	82mm	Macro		
SIGMA	24-70mm	£99	f/3.5-5.6	EX DG	ACNP	70x76mm/285g	No	62mm	Pro-spec EX lens		
SIGMA	24-135mm	£249	f/2.8-4.5	-	ACNP	84x91mm/530g	No	77mm	Internal focusing		
SIGMA	28mm	£289	f/1.8	EX DG	ACNPS	84x83mm/500g	No	77mm	Asph. glass and macro		
SIGMA	28-70mm	£239	f/2.8	EX DG	ACNP	74x87mm/510g	No	67mm	Pro-spec EX lens		
SIGMA	28-70mm	£79	f/2.8-4	DG	ACNP	69x63mm/255g	No	58mm	Multi-layer coated lens		
SIGMA	28-105mm	£169	f/2.8-4	DG	ACNP	77x80mm/405g	No	72mm	Useful range		
SIGMA	28-105mm	£99	f/3.8-5.6	-	ACNP	71x73mm/275g	No	62mm	Useful zoom range		
SIGMA	28-135mm	£109	f/3.8-5.6	-	ACNPS	75x75mm/410g	No	62mm	IF and asph. element		
SIGMA	28-200mm	£179	f/3.5-5.6	DG	ACNP	70x78mm/400g	No	62mm	Macro		
SIGMA	28-300mm	£219	f/3.5-6.3	DG	ACNP	74x86mm/490g	No	62mm	Macro		
SIGMA	30mm	£299	f/1.4	EX DC HSM	ACNPS	77x59mm/400g	Yes	62mm	Hypersonic motor		
SIGMA	50mm	£309	f/2.8	EX DG	ACNPS	71x67mm/320g	No	55mm	Macro	81%	Aug 06
SIGMA	50-150mm	£549	f/2.8	EX DC HSM	CNS	76x135mm/770g	Yes	67mm	Hypersonic motor		
SIGMA	50-500mm	£799	f/4-6.3	DG	ACNPS	95x219mm/1840g	No	86mm	With or without HSM		
SIGMA	55-200mm	£109	f/4-5.6	DC	ACNPS	72x87mm/310g	Yes	55mm	Budget superzoom		
SIGMA	70mm	£325	f/2.8	EX DG	ACNPS	76x95mm/525g	No	62mm	Useful macro	88% *	Nov 06
SIGMA	70-200mm	£595	f/2.8	EX DG HSM	CNS	86x184mm/1270g	No	77mm	Hypersonic motor		
SIGMA	70-200mm	£749	f/2.8	EX DG HSM	CNS	87x184mm/1345g	No	77mm	Great tele zoom	92% *	Sept 06
SIGMA	70-300mm	£99	f/4-5.6	DG	ACNPS	77x122mm/545g	No	58mm	Macro		
SIGMA	70-300mm	£159	f/4-5.6	DG	ACNPS	77x122mm/550g	No	58mm	Very capable lens	84%	Sept 07
SIGMA	80-400mm	£879	f/4.5-5.6	EX DG OS	CNS	95x192mm/1750g	No	77mm	Pro-spec EX lens		
SIGMA	100-300mm	£759	f/4	EX DG HSM	ACNPS	92x227mm/1440g	No	82mm	Pro-spec EX lens		
SIGMA	105mm	£289	f/2.8	EX DG	ACNPS	74x98mm/460g	No	58mm	Macro	81%	Aug 06
SIGMA	120-300mm	£1679	f/2.8	EX DG HSM	CNS	113x271mm/2680g	No	105mm	Pro-spec EX lens		
SIGMA	135-400mm	£488	f/4.5-5.6	DG	ACNPS	84x184mm/1245g	No	77mm	SLD glass		
SIGMA	150mm	£438	f/2.8	EX DG HSM	CFNS	80x137mm/895g	No	58mm	Pro-spec EX lens		
SIGMA	170-500mm	£588	f/5-6.3	DG	ACNPS	93x232mm/1345g	No	86mm	APO and rear focus		
SIGMA	200-500mm	£TBC	f/2.8	EX DG	tbc	n/a	No	N/A	A beast of a lens		
SIGMA	180mm	£459	f/3.5	EX DG HSM	ACNPS	80x182mm/965g	No	72mm	Pro-spec EX lens		
SIGMA	300mm	£1599	f/2.8	EX DG HSM	ACNPS	119x214mm/2400g	No	Drop-in	Pro-spec EX lens		
SIGMA	300-800mm	£4899	f/5.6	EX DG HSM	CNSF	157x544mm/5880g	No	Drop-in	Pro-spec EX lens		
SIGMA	500mm	£2599	f/4.5	EX DG HSM	ACNPS	123x350mm/3150g	No	Drop-in	Pro-spec EX lens		

			MIN APERTURE	DESIGNATION	MOUNT	SIZE & WEIGHT	DIGITAL ONLY	FILTER THREAD	COMMENT	SCORES	
SIGMA	800mm	£3799	f/5.6	EX DG HSM	ACNPS	156x521mm/4900g	No	Drop-in	Pro-spec EX lens		
SONY	11-18mm	£469	f/4.5-5.6	DT	A	83x81mm/360g	Yes	77mm	Ultra-widerangle zoom		
SONY	16mm	£689	f/2.8	-	A	75x67mm/400g	Yes	n/a	Fisheye		
SONY	16-80mm	£499	f/3.5-4.5	DT	A	83x72mm/440g	Yes	77m	Carl Zeiss optics		
SONY	18-70mm	£139	f/3.5-5.6	DT	A	66x77mm/235g	Yes	55mm	Average kit lens	77%	Apr 07
SONY	18-200mm	£419	f/3.5-6.3	DT	A	73x86mm/405g	Yes	62mm	Expansive zoom range		
SONY	20mm	£599	f/2.8	-	A	78x54mm/285g	Yes	72mm	Wide zoom lens		
SONY	24-105mm	£419	f/3.5-4.5	-	A	71x69mm/395g	Yes	62mm	Compact wide bible lens		
SONY	28mm	£169	f/2.8	-	A	65x43mm/185g	Yes	49mm	Standard widerangle lens		
SONY	35mm	£1049	f/1.4	G	A	69x76mm/510g	Yes	55mm	Fast standard lens		
SONY	50mm	£289	f/1.4	-	A	66x43mm/220g	Yes	55mm	Fast portraiture lens		
SONY	50mm	£419	f/2.8	-	A	72x60mm/295g	Yes	55mm	Macro		
SONY	70-200mm	£1829	f/2.8	G	A	87x197mm/1340g	Yes	77mm	Supersonic wave motor		
SONY	75-300mm	£179	f/4.5-5.6	-	A	71x122mm/460g	Yes	55mm	Good consistent perf.	78%	Sept 07
SONY	85mm	£1029	f/1.4	ZA T*	A	82x73mm/560g	No	72mm	Carl Zeiss		
SONY	100mm	£619	f/2.8	-	A	75x99mm/505g	Yes	55mm	Macro		
SONY	135mm	£1099	f/1.8	ZA T*	A	89x115mm/1050g	No	77mm	Carl Zeiss		
SONY	135mm	£899	f/2.8	T4.5 STF	A	80x99mm/730g	Yes	72mm	Soft focus effect		
SONY	300mm	£4399	f/2.8	G	A	122x243mm/2310g	Yes	n/a	Supersonic wave motor		
TAMRON	11-18mm	£429	f/4.5-5.6	SP Di-II XR	CN	82x79mm/375g	Yes	77mm	Pro spec SP lens	74%	Mar 07
TAMRON	14mm	£779	f/2.8	SP	CNP	87x87mm/675g	No	n/a	Pro spec SP lens		
TAMRON	17-35mm	£329	f/2.8-4	SP Di	CNP	83x87mm/440g	No	77mm	Great wide zoom	87% *	June 05
TAMRON	17-50mm	£299	f/2.8	SP Di-II XR	CN	82x74mm/434g	Yes	67mm	Pro spec lens	88% *	May 07
TAMRON	18-200mm	£319	f/3.5-6.3	Di-II XR	CNPS	73x84mm/423g	Yes	62mm	LD glass and IF		
TAMRON	18-250mm	£269	f/3.5-6.3	Di-II LD	CNP	84x74mm/430g	Yes	62mm	Sharp and great macro	83%	June 07
TAMRON	24-135mm	£325	f/3.5-5.6	SP AD IF	CNP	79x81mm/530g	No	72mm	Pro spec SP lens		
TAMRON	28-75mm	£299	f/2.8	SP Di	CNP	73x92mm/510g	No	67mm	Excellent all-rounder	88% *	June 05
TAMRON	28-80mm	£89	f/3.5-5.6	-	CN	72x70mm/237g	No	58mm	Aspherical elements		
TAMRON	28-105mm	£99	f/4-5.6	-	CNPS	71x73mm/310g	No	62mm	Compact budget zoom		
TAMRON	28-200mm	£249	f/3.8-5.6	Di XR	CNP	71x75mm/354g	No	62mm	IF and macro		
TAMRON	28-300mm	£269	f/3.5-6.3	Di XR	CNP	73x84mm/420g	No	62mm	LD glass and IF		
TAMRON	55-200mm	£149	f/4-5.6	Di-II LD	CN	72x83mm/300g	Yes	52mm	Good long zoom	87% *	Oct 06
TAMRON	70-300mm	£169	f/4-5.6	Di LD	CNP	77x177mm/435g	No	62mm	Average performance	80%	Sept 07
TAMRON	90mm	£329	f/2.8	SP Di	CNP	72x97mm/405g	No	55mm	Macro	89% *	Aug 06
TAMRON	180mm	£699	f/3.5	SP Di LD	CN	85x166mm/920g	No	72mm	Macro		
TAMRON	200-500mm	£589	f/5-6.3	SP Di LD	CN	94x227mm/1237g	No	62mm	Pro spec SP lens		
TAMRON	300mm	£2199	f/2.8	IF	CN	120x214mm/2800g	No	Front	LD glass and IF		
TOKINA	10-17mm	£499	f/3.5-4.5	ATX DX	CN	70x71mm/350g	No	n/a	Fisheye		
TOKINA	12-24mm	£399	f/4	ATX DX PRO	CN	84x90mm/370g	Yes	77mm	Pro spec		
TOKINA	19-35mm	£139	f/3.5-4.5	AF	CNP	82x80mm/390g	No	77mm	Internal focusing		
TOKINA	24-200mm	£199	f/3.5-5.6	ATX	CNP	82x89mm/690g	No	72mm	SLD+ aspherical glass		
TOKINA	50-135mm	£599	f/2.8	ATX DX PRO	CN	78x135mm/845g	No	67mm	Pro spec		
TOKINA	80-400mm	£619	f/4.5-5.6	ATX AF D	CN	79x137mm/1020g	No	72mm	SLD element		
TOKINA	100mm	£300	f/2.8	ATX D PRO	CN	73x95mm/540g	No	55mm	Macro		

Test Reports

Buying a new camera or lens?

ORDER HOTLINE
01707 273773

www.testreports.co.uk/photography/wdlc

Here you will find EVERY single test ever featured in What Digital Camera, available for IMMEDIATE download. **All tests cost £3.00.**

If you would like to write to OTC, our address is: OTC, 24 Market Place, Hatfield, AL10 0LN.

*All printed tests will be supplied as black and white copies

EACH INDIVIDUAL TEST COSTS JUST £3.00

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff

PARK CAMERAS
Pro Dealers for over 35 Years

Need a flash to go with your DSLR? Here's our guide

What Flash

Many DSLRs have built-in flash units, which are adequate for general snaps, but have limitations. If you want to get creative with flash, or just fire out more power with better light, a separate unit is essential.

Like lenses, though, you need to find a flash that's compatible with your camera – a Canon flash won't work with a Nikon camera, for example. There are also independent manufacturers who make versatile and powerful units in a variety of fits, while you may want something more specialised such as a hammerhead or ring flash.

Modern units offer tremendous automation and much of the mathematics that used to be required when using flash is now redundant. However, manual control is still useful to have for unusual situations or creative purposes.

Another advantage of a separate flash unit is that it will offer faster recycling times than on-camera units, which is useful if you're taking many photographs quickly. There's also battery power to consider. Flash draws a lot of power, and this can seriously reduce the life of your camera battery, but a flashgun has its own batteries – usually a set of AAs. Finally, the danger of redeye is reduced as the light is further from the lens axis.

BUYING ADVICE: CHOOSING A FLASH

What to look for in a flashgun...

GN: The flash Guide Number indicates its power output (ie. how far the flash will reach at a certain aperture and ISO). The higher the figure, the more powerful the flash. If you divide the guide number by the shooting distance (in metres) you'll get your working aperture (or, divide it by your working aperture to get your shooting distance).

Coverage: Check the maximum wideangle coverage of a flash. If you're using a wideangle lens you need to ensure the flash can cover it, otherwise you will get flash fall-off – an effect similar to vignetting.

Batteries: Flash draws a lot of power, so it's worth investing in high-powered batteries – rechargeables are the most cost effective and eco-friendly – and remember to always carry a spare set. Some units also accept large rechargeable battery packs which provide thousands of flash cycles on a single charge.

Accessories: There are a number of flash accessories available, including diffusers, which soften the light for portraits, and coloured filters for special effects.

			GUIDE NUMBER	COMPATIBILITY	TILT / SWIVEL	LENS COVERAGE	SIZE / WEIGHT	COMMENTS	SCORES	
	Canon Speedlite 220EX	£115 Street price	22	Canon	No	28mm	65 x 92 x 61mm 160g	Basic flash for EOS users		NOT YET TESTED
	Canon Speedlite 430EX	£190 Street price	43	Canon	Yes	24mm	72 x 101 x 122mm 330g	Excellent performer with even illumination	90% What Digital Camera GOLD AWARD	TESTED NOV 05
	Canon Speedlite 580EX	£300 Street price	58	Canon	Yes	24mm	75 x 114 x 134mm 375g	Great performer. Expensive, but worth it	91% What Digital Camera GOLD AWARD	TESTED DEC 06
	Canon MR-14 EX	£350 Street price	14	Canon	n/a	n/a	n/a	Simple to use with manual mode for creative control	86% What Digital Camera RECOMMENDED	TESTED MAY 07
	Canon 580 EX II	£360 Street price	58	Canon	Yes	24mm	102 x 255 x 102mm 680g	The latest model has weatherproof connections		NOT YET TESTED
	Canon MT-24 EX	£650 Street price	24	Canon	n/a	n/a	n/a	Good illumination, especially for close-up shots	86% What Digital Camera RECOMMENDED	TESTED MAY 07
	Jessops 300 AFD	£100 Street price	30	Canon, Nikon, Pentax	Tilt only	28mm	-	Lightweight and plasticky, but excellent value for money	86% What Digital Camera RECOMMENDED	TESTED DEC 05
	Metz 36-AF3	£70 Street price	36	Canon, Nikon, Minolta/ Sony	Tilt only	28mm	71 x 115 x 95mm 205g	Alternative to DSLR maker's own GN36 flash guns		NOT YET TESTED
	Metz 28-AF3 digital	£95 Street price	28	Canon, Nikon	No	24mm	58 x 85 x 33mm 100g	Good value and easy to use but gives mixed results	84%	TESTED AUG 07
	Metz 44-MZ2	£145 Street price	44	SCA 3002 - compatible with most	Yes	28mm	75 x 125 x 109mm 400g	Reasonably priced alternative to proprietary brand flash		NOT YET TESTED
	Metz 44-AF4/ 44-AF4i	£150 Street price	44	Canon, Nikon, Olympus, Minolta/ Sony	Yes	28mm	75 x 125 x 109mm 400g	AF4 - Canon, Minolta (Sony) and Olympus AF4i - Nikon		NOT YET TESTED
	Metz 54-AFI	£180 Street price	54	Canon, Nikon, Minolta/ Sony	Yes	24mm	75 x 125 x 109mm 300g	Fairly basic for the price, but sturdy and well made	81%	TESTED NOV 05
	Metz 54-MZ4/ 54-MZ4i	£270 Street price	54	SCA 3002 - compatible with most DSLRs	Yes	20mm	75 x 125 x 109mm 480g	Fully featured and compatible with most cameras	92% What Digital Camera GOLD AWARD	TESTED DEC 05
	Metz 58-AFI	£300 Street price	58	Canon, Nikon	Yes	18mm	-	USB socket to upgrade flash firmware if you change camera	88% What Digital Camera RECOMMENDED	TESTED MAR 07
	Metz 45-CL4 digital	£370 Street price	45	SCA 3002 - compatible with most DSLRs	Yes	28mm	-	Hammerhead flash favoured by wedding snappers		NOT YET TESTED
	Metz 76-MZ5 digital	£500 Street price	76	SCA 3002 - compatible with most DSLRs	Yes	24mm	-	High-end digital hammerhead		NOT YET TESTED
	Nikon SB-400	£150 Street price	21	Nikon	Tilt only	-	66 x 57 x 80mm 127g	Lightweight flash with unique tilting front	90% What Digital Camera GOLD AWARD	TESTED MAY 07
	Nikon SB-600	£210 Street price	30	Nikon	Yes	24mm	68 x 124 x 90mm 300g	As good as it gets for a mid-range flash, but pricey	90% What Digital Camera GOLD AWARD	TESTED NOV 05
	Nikon SB-800	£270 Street price	38	Nikon	Yes	24mm	71 x 127 x 92mm 350g	Faultless performer – fast, accurate and even	93% What Digital Camera GOLD AWARD	TESTED DEC 05
	Nikon R1C1	£500 Street price	10 (x2)	Nikon	Yes	n/a	68 x 96 x 58mm 160g	Wireless with even light and accurate illumination	89% What Digital Camera GOLD AWARD	TESTED MAY 07

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

			GUIDE NUMBER	COMPATIBILITY	TILT / SWIVEL	LENS COVERAGE	SIZE / WEIGHT	COMMENTS	SCORES	
	Olympus FL-20	£120 Street price	20	Olympus E system	No	n/a	56 x 96 x 28mm 74g	Useful, compact unit with even illumination and good colour	85% What Digital Camera RECOMMENDED	TESTED AUG 07
	Olympus FL-36	£150 Street price	36	Olympus E system	Yes	16mm	65 x 105 x 95mm 270g	Good performance for 4/3 Olympus users	86% What Digital Camera RECOMMENDED	TESTED NOV 06
	Olympus FL-50	£280 Street price	50	Olympus E system	Yes	16mm	78 x 133 x 102mm 380g	More than adequate, though sluggish recycling times	87% What Digital Camera RECOMMENDED	TESTED DEC 06
	Olympus SRF-11	£460 Street price	11	Olympus E system	Yes	n/a	120 x 135 x 24mm 145g	Easy to use and solid but limited in compatibility	86% What Digital Camera RECOMMENDED	TESTED MAR 07
	Olympus STF-22	£640 Street price	16/ 22	Olympus E system	Yes	n/a	73 x 50 x 39mm 105g	Simple to operate with excellent lighting control	86% What Digital Camera RECOMMENDED	TESTED MAR 07
	Panasonic DMW-FL28 E	£100 Street price	tbc	Panasonic FZ series	tbc	tbc	tbc 282g	Flash for Panasonic FZ10/20/30 cameras		NOT YET TESTED
	Panasonic DMW FL-500E	£390 Street price	50	Panasonic FZ50 / L1	Yes	-	-	Flash for Panasonic FZ50 / L1 cameras		NOT YET TESTED
	Pentax AF-360 FGZ	£170 Street price	36	Pentax	Tilt only	24mm	206 x 89 x 79mm 270g	TTL flash for *ist D and K series DSLRs		NOT YET TESTED
	Pentax AF540 FGZ	£320 Street price	54	Pentax	Yes	24mm	76 x 142 x 109mm 380g	Dedicated flashgun for Pentax users		NOT YET TESTED
	Pentax Ringblitz AF-140C	£350 Street price	14	Pentax	n/a	n/a	n/a	Dedicated ringflash for Pentax users		NOT YET TESTED
	Quantum T5D	£590 Street price	50	Optional modules, Canon, Olympus Nikon Pentax Hasselblad Konica	Yes	n/a	150 x 75 x 75mm 720g	Modular system with a large range of accessories		NOT YET TESTED
	Samsung SEF-36 PZF	£165 Street price	30	Samsung GX Series	Tilt only	20mm	70 x 110 x 116mm 380g	Will also work on Pentax K series cameras		NOT YET TESTED
	Sigma EF500 DG ST	£105 Street price	50	Canon (ETTL) Nikon iTTL Pentax Minolta Sigma	Yes	17mm	77 x 139 x 139mm 320g	Won't win a beauty contest, but good performance and price	86% What Digital Camera RECOMMENDED	TESTED NOV 06
	Sigma EF500 DG super	£150 Street price	50	Canon (ETTL) Nikon iTTL Pentax Minolta Sigma	Yes	17mm	77 x 139 x 113mm 325g	Thoroughly recommended if you're on a tight budget	89% What Digital Camera RECOMMENDED	TESTED DEC 06
	Sigma EM140 DG macro	£250 Street price	14	Canon (ETTL) Nikon iTTL Sigma	n/a	n/a	127 x 129 x 31mm 430g	Good power for macro and portrait work		NOT YET TESTED
	Sony HVL F36AM	£180 Street price	36	Sony Alpha	Tilt only	17mm	71 x 124 x 91mm 261g	Dedicated flash for Sony Alpha's 'unique' hotshoe		NOT YET TESTED
	Sony HVL F56AM	£260 Street price	56	Sony Alpha	Yes	17mm	79 x 135 x 102mm 371g	Wireless iTTL control adds versatility		NOT YET TESTED
	Sunpak PF30X	£100 Street price	30	Canon ETTL II Nikon iTTL	Tilt only	20mm	100 x 68 x 92mm 220g	A solid performer with nice features at a decent price	84%	TESTED AUG 07
	Samsung SEF-54 PZF	£320 Street price	45	Samsung GX Series	Yes	20mm	72 x 142 x 103mm 380g	Guide number of 45 (not 54 as its name suggests...)		NOT YET TESTED
	Sunpak PZ40X	£145 Street price	40	Canon ETTL II Nikon iTTL Minolta / Sony	Tilt only	24mm	93 x 63 x 90mm 205g	Compact yet powerful unit, though features are limited	84%	TESTED NOV 06

What Digital Camera

Need to Know

Dazed and confused? Our guide to all the techno-babble will ease your pain...

TTL: Through The Lens flash metering matches the exposure with the information taken by the camera's sensor to provide the perfect flash output and exposure.

WIRELESS SLAVE COMPATIBILITY: This lets the flash control several off-camera units, or slaves, sharing selected shooting data for a coherently managed portable lighting set-up without wires.

SWIVEL AND BOUNCE: Some units have flash heads that swivel and tilt, allowing you to bounce the light off a ceiling or wall to provide a softer, more diffused light.

AF ASSIST: The flash can supplement the camera's own illumination to provide more accurate autofocus at longer distances and in lower light conditions.

DIFFUSION LENS: A diffusion device built into the flash to increase the spread of the output to cover wideangle lenses.

ZOOM HEAD: Concentrates the energy of your flash when using telephoto lenses. Motorised zooms automatically alter the coverage to match the focal length of your lens.

FP SYNC: FP mode allows flash photography at any shutter speed by using a rapid pulse of light instead of a single burst, to illuminate the scene as the shutter travels across the sensor plane.

Flashguns to light up your photography

This Month's Picks

CANON 580EX

Why we love this flash...

With a guide number of 58, lightning-fast recycling time and an array of functions, the 580EX is one of Canon's top flashes and is a superb choice for the enthusiastic amateur, budding wedding photographer or professional.

SIGMA EF500 DG SUPER

Why we love this flash...

Light and an all-round good performer, with a generous helping of features, Sigma's EF500 DG Super is one of the best value flashguns for under £150.

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff

PARK CAMERAS
Pro Dealers for over 35 Years

You've got your gear, now where to put it?

What Bag

When you've spent a small fortune on a camera, lenses and other kit, you want to keep your investment protected. A decent camera bag is essential not just to carry your gear but to save it from bad weather, knocks and bumps and pilfering fingers.

From the funky urban style of Crumpler bags to the classic khaki canvas Billingham, there's a style of bag to suit everybody.

BUYING ADVICE: CHOOSING A BAG

Types of bag

Shoulder bags
Useful for easy access to kit while on the move, with external pockets for cards, filters, documents etc.

Backpacks
Backpacks offer better support for your spine, especially if you have a lot of gear to carry. Some have space for laptops and straps for tripods and camping gear. They are less convenient for rapid access to gear though.

Sling bags
A hybrid shoulder/back pack offering comfortable carriage on your back with an easy swing to the side for access.

Rolling cases
Cases with wheels and handles for carrying heavy equipment. Smaller versions also double as a backpack or briefcase.

Hard cases
Aluminium cases, or the waterproof resin Peli range, are ideal for airline travel or long-term storage/protection. They come in a range sizes from attaché case to large trunk-types.

Bags

RANGE	TYPE	PRICE FROM	NO OF MODELS	FEATURES	SCORE	
BILLINGHAM	Press Top	Shoulder	£130	3	Light weight, easy access		
BILLINGHAM	Packington	Shoulder	£145	1	Large canvas bag		
BILLINGHAM	Pro	Shoulder	£160	5	Deep, pockets, brass/leather fixtures		
BILLINGHAM	Hadley	Shoulder	£70	5	Briefcase design	82%	Apr 07
BILLINGHAM	L2	Shoulder	£80	1	Zipless and weatherproof		
CLUBMAN	Digital	Hard case	£20	2	Vacuum-formed briefcase with foam insert		
CLUBMAN	Ali	Hard case	£23	3	Aluminium with foam insert		
CRUMPLER	Half Photo	Backpack	£105	3	Dual compartment, security zips and backbrace		
CRUMPLER	Pretty Boy Maxi	Shoulder	£15	5	4 colours, protective seals		
CRUMPLER	Dick Casey Photo	Rolling case	£250	1	Extendable handle, removable dividers		
CRUMPLER	The Daily	Shoulder	£55	6	Long adjustable strap, laptop compartment		
CRUMPLER	Pretty Boy	Backpack	£75	1	4 colours, double compartment		
CRUMPLER	Full Photo	Backpack	£120	3	Security zips and backbrace		
DOMKE	J-Series	Shoulder	£100	4	Ballistic-grade nylon exterior and slimline padding		
DOMKE	Classic canvas	Shoulder	£80	7	Canvas exterior in a range of styles and sizes		
DOMKE	Ballistic	Shoulder	£80	4	Similar to Classic but with ballistic nylon	80%	Jul 06
DOMKE	Satchel	Shoulder	£80	2	Slimline briefcase design for camera and laptop		
JESSOPS	Fastnet	Shoulder	£10	2	Small, weatherproof and functional	83%	Mar 06
JESSOPS	Backpack	Backpack	£15	1	Small basic pack		
JESSOPS	Kamala	Shoulder	£17	2	Traditional style		
JESSOPS	Camcase	Hard case	£29	5	Strong, lockable case with partitions		
KATA	CC series	Hard case	£160	2	Well-padded suitcase-style cases		
KATA	SB series	Shoulder	£110	3	Well padded with rain cover		
KATA	WS series	Shoulder	£120	2	Rugged bag with waist belt		
KATA	EXO series	Shoulder	£70	2	Small bag with lower compartment		
KATA	PB series	Shoulder	£30	3	Small, general-purpose camera bags		
KATA	C series	Shoulder	£20	5	Small, rugged bags		
KATA	T series	Sling	£65	2	Comfort of backpack with ease of shoulder bag		
KATA	W series	Waist packs	£65	2	Easy carrying and access	84%	Aug 06
KATA	BP-502	Backpack	£260	1	Tough pack with laptop space		
KATA	HB series	Backpack	£170	2	Comfortable large hikers camera pack		
KATA	R-series	Backpack	£130	3	Easy access to central compartment		
LOWEPRO	DryZone	Backpack	£140	3	Fully waterproof packs with rubber seals		
LOWEPRO	SlingShot	Sling	£60	3	Hybrid shoulder/backpack with dual compartments		
LOWEPRO	Orion	Back/waist pack	£120	1	Combines easy access of a waist belt with comfort of backpack		
LOWEPRO	Rezo	Shoulder	£15	7	Small, general-purpose camera bags		
LOWEPRO	Omni	Back/Shoulder	£200	4	Designed to fit into a Trekker hard case		
LOWEPRO	Rover	Backpack	£120	2	Dual compartment packs for camera and clothes or food		
LOWEPRO	Road Runner	Rolling/Backpack	£270	2	Backpacks with wheels for heavy kit		
LOWEPRO	Stealth Reporter	Shoulder	£60	6	Photojournalist design with a wealth of features	87%	Jun 05
LOWEPRO	Compo	Backpack	£75	4	Designed for digital, with laptop space		
LOWEPRO	Trekker	Backpack/Roller	£90	7	A range of backpacks for different needs		
LOWEPRO	ProRoller	Rolling	£300	4	Heavy-duty shipping cases		
LOWEPRO	Vertex	Backpack	£109	3	Weatherproof backpacks		
LOWEPRO	Apex	Shoulder	£30	10	Small, single-compartment bags with weatherproofing		
NATIONALGEOGRAPHIC	Earth Explorer	Backpack	£120	2	Modular system with space for camping gear		
NATIONALGEOGRAPHIC	Earth Explorer	Shoulder	£40	2	Environmentally friendly bags		
NATIONALGEOGRAPHIC	Tripod	Backpack	£40	1	Tripod case with room for camera gear		
PELICAN	Peli	Hard Case	£25	28	Watertight hard cases with valves and o-rings		
SAMSONITE	Trekking Premium	Shoulder	£25	5	Good looking holdall-style bags (score applies to 140 model)	89%	Jun 05
STORM	iM series	Hard Case	£30	19	Hard waterproof cases with valves, 6 colours		
TAMRAC	Explorer	Shoulder	£20	4	Small SLR bags		
TAMRAC	System	Shoulder	£25	3	Bags with ballistic nylon (score applies to 6 model)	87%	Jun 05
TAMRAC	Expedition	Backpack	£40	5	Comfortable packs with modular accessories		
TAMRAC	Adventure	Backpack	£40	7	Dual compartments for food or clothes. Model 9 holds a laptop		
TAMRAC	Pro	Shoulder	£40	3	Tough weatherproof bags with digital management system	86%	Jul 06
TAMRAC	CyberPack	Backpack	£90	3	Ballistic grade with laptop compartments		
TAMRAC	Adventure Messenger	Shoulder	£17	3	Small, slimline bags	87%	Jan 07
TAMRAC	Travel Pack 7.1	Backpack	£30	1	Small backpack		
TAMRAC	Turbo Cyber Pro	Shoulder	£80	1	Briefcase style with laptop space		
TAMRAC	CyberPro	Rolling	£150	2	Briefcase design with wheels and laptop space		
TAMRAC	SpeedRoller 2	Rolling	£200	1	Suitcase-style roller with laptop space		
TAMRAC	CyberPack Express	Rolling/Backpack	£200	1	Rolling case with backpack harness and laptop space		
TAMRAC	Velocity	Sling	£30	5	Small to medium sling bags with easy carriage and access		
TAMRAC	Velocity 5	Waist pack	£35	1	Small bag with added waist belt		
TAMRAC	Digital Convertible	Shoulder	£40	1	Small bag with added waist belt		
TENBA	Shootout	Backpacks	£55	6	Pro packs in a variety of sizes		
TENBA	Pro Digital 2.0	Shoulder	£95	3	Pro shoulder bags with laptop space		
TENBA	Pro Digital 2.0	Backpack	£120	2	High-grade bags with laptop space		
TENBA	Metro	Shoulder	£70	5	Photojournalist style with laptop options		
TENBA	Pro Traveller II	Shoulder	£95	3	Rugged bags with ballistic nylon		

PARK CAMERAS
Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

What Tripod

It doesn't matter if you're shooting landscapes or the kids in your front room – if your camera isn't held steady, you're going to get blurred images.

The best solution is a tripod or monopod. The following selected list should help you choose the right one.

Tripods

			MAX HEIGHT	MIN HEIGHT	FOLDED LENGTH	LEG SECTIONS	HEAD	WEIGHT	COMMENTS	SCORES	
BENBO	Mini Trekker	£64.99	71cm	0cm	55cm	1	No	1.5kg n/a	Hook for camera bag / weight		
BENBO	Trekker Tripod Mkll	£134.49	150cm	0cm	84cm	2	Yes	2kg n/a	Available as kit (with head) or legs only	84%	Mar 07
BENBO	1	£215.49	157cm	0cm	84cm	2	Yes	3.4kg n/a	Sealed legs / waterproof		
BENBO	2	£237.99	256cm	0cm	114cm	2	Yes	3.75kg n/a	Long-legged version of Benbo 1		
CALUMET	CK6143	£19.95	167cm	72cm	72cm	3	Yes	3.1kg 5kg	Outstanding value, eversible column	88%	Mar 06
CALUMET	7100	£49.99	147cm	23cm	54cm	4	Yes	2kg 5kg	Great for landscapes	85%	Feb 07
CALUMET	CK6011	£50.95	156cm	51cm	55cm	4	Yes	2.7kg 3.6kg	Solid all-rounder at good price		
CALUMET	7300	£68.99	172cm	27cm	62cm	4	Yes	2.6kg 5kg	Heavier version of 7100 kit	87%	Feb 07
CALUMET	CK6161	£105.44	165cm	71cm	77cm	3	Yes	3.1kg 5kg	Reversible column, but a little pricey		
CALUMET	CK6461	£114.99	206cm	56cm	81cm	3	Yes	5.8kg 5.8kg	Heavy duty tripod - ideal for the studio		
DIGIPOD	A2230	£54.95	112cm	49cm	53cm	3	Yes	0.9kg 2.5kg	Lightweight aluminium tripod		
DIGIPOD	A3240	£89.95	155cm	55cm	60cm	4	Yes	2.5kg 10kg	Heavyweight aluminium tripod		
DIGIPOD	C2530	£149.95	126cm	54cm	58cm	3	Yes	1.2kg 4.5kg	Carbon fibre		
DIGIPOD	C2840	£179.95	143cm	51cm	55cm	4	Yes	1.6kg 8kg	Solid, lightweight carbon fibre	87%	June 07
GIOTTOS	GB1140	£79.99	142cm	44cm	47cm	4	Yes	1.3kg 2.5kg	Ideal lightweight travelling companion	76%	Mar 07
GIOTTOS	MT9160	£109.99	160cm	-	60cm	3	Yes	2.8kg 10kg	Solid aluminium all-rounder		
GIOTTOS	MT9180	£129.99	180cm	-	59cm	4	Yes	3kg 12kg	Folds small, but extends higher than most		
GIOTTOS	GB4180	£129.99	179cm	66cm	72cm	3	Yes	3kg 10kg	Hanging hook, bubble level and compass		
GIOTTOS	MT8160	£229.99	160cm	-	60cm	3	Yes	2.5kg 10kg	Carbon fibre version of the MT9160		
GIOTTOS	MT8180	£289.99	180cm	-	59cm	4	Yes	2.6kg 10kg	Carbon fibre version of the MT9180		
GITZO	G2220	£224.95	162cm	0cm	64cm	3	No	2.3kg 9kg	Aluminium legs with tilting column		
GITZO	G1320	£279.95	191cm	49cm	76cm	3	No	3.3kg 13kg	Impressive extension, aluminium		
GITZO	G1410	£314.95	164cm	19cm	76cm	3	No	3.8kg 12kg	Optional columns		
GITZO	GT1550T	£464.95	146cm	36cm	41cm	5	No	1kg 4.5kg	5 leg sections for incredible compactness		
GITZO	GT2530EX	£464.95	170cm	0cm	68cm	3	No	1.4kg 12kg	Carbon fibre		
GITZO	GT3540	£589.95	161cm	10cm	61cm	3	No	2kg 18kg	Very solid carbon fibre legs		
MANFROTTO	055D / 055DB	£100	181cm	44cm	61cm	2	No	2.2kg 7kg	Available in silver (D) or black (DB)		
MANFROTTO	055PRO / 055PROB	£135	176cm	11cm	65cm	3	No	2.4kg 7kg	Great for low angles		
MANFROTTO	190MF4	£230	131cm	11cm	46cm	4	No	1.6kg 4kg	Magnesium / carbon fibre legs	88%	Mar 05
MANFROTTO	058 / 058B	£235	217cm	44cm	94cm	2	No	6.2kg 12kg	Geared column, heavy duty		
MANFROTTO	458B Nectec	£275	156cm	10cm	64cm	3	No	2.4kg 8kg	Unique 'automatic' leg locks	85%	Mar 07
MANFROTTO	161MK2 / 161MK2B	£375	267cm	44cm	105cm	3	No	8kg 20kg	Rock solid, perfect studio tripod		
NAT. GEOG.	Tundra Ballhead	£54.95	152cm	17cm	46cm	5	No	0.9kg 1kg	Very compact travel 'pod	81%	Test 06
NAT. GEOG.	Expedition Carbon	£299.95	170cm	11cm	58cm	4	No	2.3kg 7kg	Carbon-fibre travelling companion		
NAT. GEOG.	Expedition Automatic	£329.95	160cm	11cm	69cm	3	No	3.2kg 8kg	Rebadged Manfrotto Nectec 458B		
SLIK	U8000	£49.99	150cm	-	59cm	3	No	1.5kg -	Light weight, low cost		
SLIK	ABLE 300 DX	£69.99	155cm	-	66cm	3	No	2.6kg -	Includes 3-way quick release head		
SLIK	PRO 330 DX	£139.99	160cm	29cm	60cm	3	Yes	1.6kg 5kg	Comes with Pro SH-705E head	86%	Mar 07
SLIK	PRO 700 DX	£189.99	190cm	62cm	76cm	3	Yes	3.2kg 6.8kg	Comes with Pro 700 DX head		
SLIK	PROFESSIONAL II	£289.99	170cm	-	68cm	3	No	3.2kg -	Bubble level, reversible geared column		
UNILOC	1600	£98.89	153cm	0cm	81cm	2	No	2.4kg -	Independent leg movements		
UNILOC	Major 1220	£120.89	122cm	0cm	68cm	2	No	3.3kg -	Sealed, waterproof legs		
UNILOC	System 1700	£131.89	175cm	0cm	79cm	3	No	3.0kg -	Converts to monopod		
UNILOC	Major 1600	£137.39	160cm	0cm	79cm	2	No	3.4kg -	180° centre column joint		
VELBON	CX-300	£30.96	175cm	51cm	54cm	3	No	1.1kg 5kg	Budget tripod with fixed head		
VELBON	CX-540	£41.95	185cm	56cm	61cm	3	No	1.5kg 5kg	Heavier duty version of CX-300	73%	Mar 07
VELBON	ULTRA LUXI F	£104.99	121cm	18cm	34cm	5	No	1kg -	Compact model with twist lock legs	79%	Mar 05
VELBON	Sherpa 200	£69.99	168cm	59cm	62cm	3	No	1.9kg 3.5kg	Aluminium, with head		
VELBON	Sherpa 600R	£92.94	195cm	29cm	65cm	3	No	2.2kg 15kg	Aluminium, drops to near ground level		
VELBON	Sherpa Pro CF-531EL	£199.99	156cm	17cm	55cm	3	No	1.3kg -	Carbon fibre, hanging hook	86%	Mar 05

Ball and Socket Heads

			HEIGHT	WEIGHT	MAX LOAD	BUBBLE LEVEL	QUICK RELEASE	SCORES
BENBO	Compact B&S	£37.99	8cm	175g	8kg	no	no	
BENBO	Pro B&S	£85.99	10cm	360g	12kg	no	no	
CALUMET	Med. Ball	£16.96	-	-	4kg	yes	yes	
CALUMET	QuickGrip	£19.95	-	-	-	yes	yes	
GIOTTOS	MH1003-310	£29.99	7.2cm	160g	4kg	no	no	
GIOTTOS	MH1001-621	£39.99	11cm	596g	6kg	yes	yes	
GIOTTOS	MH1002-310	£44.99	8.5cm	209g	6kg	no	no	
GIOTTOS	MH1000-300	£79.99	11.9cm	534g	10kg	no	no	
GIOTTOS	MH1003-550	£99.99	15cm	1135g	15kg	no	no	
GITZO	G0077	£29.95	6cm	100g	1kg	no	no	
GITZO	G1178M	£107.95	9.5cm	400g	4kg	no	yes	
GITZO	G1277M	£124.95	11.5cm	500g	6kg	no	no	
GITZO	G1279M	£124.95	11cm	500g	5kg	no	no	
GITZO	G1276M	£149.95	12cm	600g	5kg	no	yes	
GITZO	G1378M	£214.95	14cm	1.1kg	8kg	yes	yes	
MANFROTTO	222	£190	21cm	780g	2.5kg	yes	yes	
MANFROTTO	322RC2	£100	10.3cm	700g	5kg	yes	yes	
MANFROTTO	468MG	£200	13cm	650g	16kg	no	yes	
MANFROTTO	468MGRC3	£230	12cm	800g	16kg	no	yes	
MANFROTTO	482 Micro	£25	5.9cm	110g	2kg	no	no	
NAT. GEOG.	RC2	£224.95	12.4cm	700g	10kg	no	yes	
NAT. GEOG.	RC5	£244.95	12.5cm	700g	12kg	no	yes	
SLIK	Small Ball Head	£19.99	7.5cm	120g	1.6kg	no	no	
SLIK	Ball Head 800	£69.99	12cm	760g	-	no	yes	
SLIK	AF2100	£99.99	14cm	870g	4.5kg	no	yes	
VELBON	QHD-41Q	£38.99	6.8cm	130g	1.5kg	no	yes	
VELBON	QHD-51Q	£54.99	8.4cm	180g	3.5kg	no	yes	
VELBON	QHD-61Q	£84.99	9cm	310g	5.5kg	yes	yes	
VELBON	QHD-71Q	£99.99	10.7cm	450g	7.5kg	yes	yes	

Pan and Tilt Heads

			HEIGHT	WEIGHT	MAX LOAD	BUBBLE LEVEL	QUICK RELEASE	SCORES	
CALUMET	CKD043	£19.95	-	-	5kg	yes	yes		
CALUMET	CKD061	£29.99	-	-	5.8kg	yes	yes		
CALUMET	CK7061	£44.96	-	-	-	yes	yes		
GIOTTOS	MH5000	£44.99	12cm	790g	6kg	yes	no		
GIOTTOS	MH5001	£49.99	12cm	820g	6kg	yes	yes		
GITZO	G2271M	£184.95	10cm	700g	5kg	no	no		
GITZO	G1570M	£184.95	10.5cm	1300g	10kg	no	no		
GITZO	G2272M	£199.95	9.3cm	700g	5kg	no	yes		
MANFROTTO	056	£25	10cm	500g	3kg	no	no		
MANFROTTO	460MG	£80	10.5cm	430g	3kg	no	yes		
MANFROTTO	804RC2	£60	12cm	750g	4kg	no	yes		
MANFROTTO	229	£160	16cm	1900g	12kg	yes	yes		
VELBON	PHD-31Q	£21.99	7cm	240g	-	no	yes		
VELBON	PHD-41Q	£39.99	8.7cm	430g	-	yes	yes	88%	Apr 07
VELBON	PHD-51Q	£109.99	12cm	670g	5kg	yes	yes		
VELBON	PHD-61Q	£129.99	13.3cm	820g	5kg	yes	yes		

Monopods

			MAX HEIGHT	FOLDED LENGTH	LEG SECTIONS	HEAD	WEIGHT	SCORES	
BENBO	Trekker Monopod	£29.99	160cm	89cm	2	Yes	600g		
GIOTTOS	MM3970	£49.99	170cm	58cm	4	No	810g		
GIOTTOS	MM5570	£69.99	177cm	64cm	4	No	1250g		
GIOTTOS	MM8980	£89.99	180cm	60cm	4	No	650g		
GITZO	G1564L	£109.95	202cm	60cm	5	No	1000g		
GITZO	GM2340	£109.95	156cm	49cm	4	No	600g		
GITZO	GM2941	£129.95	157cm	52cm	4	No	400g		
GITZO	GM5540	£229.95	162cm	55cm	4	No	900g		
MANFROTTO	679B	£34	156cm	62cm	3	No	600g	87%	Sep 07
MANFROTTO	680	£44	154cm	51cm	4	No	830g		
MANFROTTO	682	£77	172cm	69cm	-	No	1150g		
NG	Tundra Monopod	£30	156cm	48cm	5	Yes	390g	82%	Sep 07
SLIK	Slim Pod	£24.99	153cm	48cm	4	No	290g	80%	Sep 07
SLIK	Monopod 350	£29.99	160cm	51cm	4	No	300g	89%	Sep 07
VELBON	Ultra Stick 40	£24.99	144cm	42cm	4	No	220g	78%	Sep 07
VELBON	RUP-40	£29.99	158cm	49cm	4	No	360g	89%	Sep 07
VELBON	Sherpa Pro 7	£94.99	170cm	53cm	4	No	760g		

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff

PARK CAMERAS
Pro Dealers for over 35 Years

Everything you need to know when shopping for storage

What Portable Storage

Thanks to the rise of the portable media player, the once humble storage device market has seen rapid advances in recent years.

Buying storage no longer boils down to a choice of capacity and screen size; today's devices are not only capable of keeping your photos safe, many can also play video files including full-length movies. More advanced models even offer attachments enabling users to record digital TV. The ability to play MP3 music files is also a bonus – one that can provide a welcome soundtrack to photographers on the move. A high-quality LCD screen is a must, and in most cases bigger is definitely better.

BUYING ADVICE: CHOOSING A STORAGE DEVICE

What to look for in portable storage...

LCD: A larger colour LCD is easier to view, but don't forget about resolution. The more pixels the better.

Capacity: If you are going to use the device mainly as a media player, you may not need the largest capacity. If it's strictly for storage, bypass fancy features for the larger model.

File compatibility: Most accept all major image formats, but more-obscure video files may not be accepted by some devices.

We choose a couple of the best devices

This Month's Top Picks

JOBO GIGA ONE

Why we love this viewer... You can't view your pictures on the Jobo, but if you just need an easy-to-use storage device, that supports all the main card types at a great price, then you won't do much better than this one.

ARCHOS 504

Why we love this viewer... With up to 160GB of storage space and a large, widescreen LCD monitor, the 504 is as great a unit for multimedia storage as it is for playback (and showing off).

			CAPACITY	LCD	CARD SLOTS	SIZE & WEIGHT	FILE FORMATS	SCORES	
	SmartDisk PhotoBank	£75 Street price	40GB	Storage only - no picture	CF SD MS SM	115 x 78 x 25mm 262g	*Storage only - no image playback on LCD*	78%	TESTED APR 2007
	StorVision PSC-100	£100 Street price	40GB (also 80GB 100GB 120GB)	Storage only - no picture	CF SD MS xD SM	114 x 76 x 21mm 262g	*Storage only - no image playback on LCD*		NOT YET TESTED
	JOBO Giga One	£100 Street price	30GB (also 40GB 80GB 120GB)	Storage only - no picture	CF SD MS SM XD	115 x 78 x 25mm 254g	*RAW, JPEG, MP3*	84%	TESTED FEB 2006
	Braun Pixel Bank	£110 Street price	60GB	Storage only - no picture	CF SD MS	125 x 75 x 29mm 250g	*Storage only - no image playback on LCD*	79%	TESTED APR 2007
	Archos 404	£175 Street price	30GB	3.5in 320 x240 pixels	None Optional adaptor	100 x 78 x 15 mm 190g	*MPEG, WMV, MP3, AAC, AC3, WMA, JPEG, PNG, BMP, PDF*	81%	TESTED APR 2007
	Apple iPod 30Gb	£180 Street price	30GB	2.5in 320 x240 pixels	None Optional adaptor	103.5 x 61.8 x 11mm 136g	*AAC, MP3, AIFF, WAV, Apple loss-less, MPEG, mov-m4v, JPEG*		NOT YET TESTED
	Jobo Spectator	£200 Street price	40GB (also 80GB 120GB)	2.5in 280 x320 pixels	CF (I+II) SD MS	129 x 78 x 23.7 mm 183g	*JPEG*		NOT YET TESTED
	Archos 504	£230 Street price	80GB (also 160GB)	4.3in 480 x272 pixels	None Optional adaptor	130 x 78 x 23 mm 315g	*MPEG, WMV, MP3, AAC, AC3, WMA, JPEG, PNG, BMP, PDF*	83%	TESTED APR 2007
	Apple iPod 80Gb	£240 Street price	80GB	2.5in 320 x240 pixels	None Optional adaptor	103.5 x 61.8 x 14mm 157g	*AAC, MP3, AIFF, WAV, Apple loss-less, MPEG, MOV, M4V, JPEG*		NOT YET TESTED
	Archos 604 WiFi	£240 Street price	30GB	4.3in 480 x272 pixels	None Optional adaptor	133 x 78 x 18 mm 290g	*MPEG, WMV, MP3, AAC, AC3, WMA, JPEG, PNG, BMP, PDF*		NOT YET TESTED
	Vosonic VP6230	£250 Street price	40GB (others up to 120GB)	2.5in	CF SD MS xD SM	128 x 76 x 30mm 282g	*JPEG, MP3, WMA, AVI, MPEG*		NOT YET TESTED
	SanDisk Sansa View	£250 Street price	8GB	4in 640 x 480 pixels	SD	78.5 x 123 x 16.9mm 264g	*JPEG, MPEG, MP3*		NOT YET TESTED
	Archos 704 WiFi	£320 Street price	40GB	7" 800 x480 pixels	None Optional adaptor	182 x 128 x 20mm 630g	*JPEG, MP3, WMA, WAV, MPEG-2/4, WMV, AAC, AC3, PDF*		NOT YET TESTED
	Epson P3000	£350 Street price	40GB	4in 640 x480 pixels 4 colour	CF, SD Optional adaptor for other types	150 x 88.7 x 33.1mm 426g	*JPEG, RAW, MPEG, MP3, AAC, WMV, WMA*	87% What Digital Camera RECOMMENDED	TESTED APR 2007
	Epson P4000	£360 Street price	80GB	3.8in 640 x480 pixels	CF, SD Optional adaptor for other types	147 x 84 x 31.4mm 415g	*JPEG, RAW, MPEG, MP3, AAC*	92% What Digital Camera GOLD AWARD	TESTED FEB 2006
	JOBO Giga Vu Pro Evolution	£360 Street price	40GB (also 120GB)	4in 640 x480 pixels	CF Optional adaptor for other types	145 x 107 x 38mm 420g	*RAW, JPEG, MP3, MPEG, WAV*	87% What Digital Camera RECOMMENDED	TESTED APR 2007
	Canon M30	£360 Street price	30GB	3.7in 160 deg viewing angle	CF, SD	TBC 140x 81x 34mm	*Canon RAW, JPEG, MPEG, WAV, MP3*		NOT YET TESTED
	Canon M80	£425 Street price	80GB	3.7in 160 deg viewing angle	CF, SD	TBC 140x 81x 34mm	*Canon RAW, JPEG, MPEG, WAV, MP3*		NOT YET TESTED
	Epson P5000	£430 Street price	80GB	4in 640 x480 pixels 4 colour	CF, SD Optional adaptor for other types	150 x 88.7 x 33.1mm 430g	*JPEG, RAW, MPEG, MP3, AAC, WMV, WMA*	89% What Digital Camera RECOMMENDED	TESTED APR 2007

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.Park Cameras.com/wdc for LOW Prices & Superb Service

Everything you need to buy the right memory card for your camera

What Memory Card

High speed, high capacity, SD, xD... memory cards come in many shapes and sizes, so let's make things clearer...

Your camera will, in the majority of cases, only accept one type of card. The most popular type is the SD card, although some manufacturers have specific card types dedicated to their cameras. Cards labelled as being 'high-speed' are able to transfer data faster than standard cards, but are usually more expensive. Some of the more-expensive cards even come with image-recovery software – useful if you're a bit clumsy and tend to delete pictures by mistake...

BUYING ADVICE: CHOOSING A CARD

What to look for in a memory card...

SD/SDHC

The most popular card format, SD cards are compatible with the most digital cameras. SDHC are the latest 'high-capacity' versions and not compatible with older cameras so check that your camera will take them before buying one. Some feature a built-in USB adaptor, so you can plug straight into your computer without the need for a separate card reader.

COMPACT FLASH

Coming in a wide variety of speeds, these are used in all the high-end DSLRs – where fast data transfer is more of an issue – and in some budget models too.

MEMORY STICK

Used by Sony cameras, Memory Stick comes in two main types – Pro and Pro Duo. Newer Sony cameras take the Pro Duo type, but can be used in older models with an adaptor.

XD

Exclusive to Fujifilm and Olympus cameras. Look out for type 'H' cards, which offer a faster data transfer rate than 'M' type cards. Also look out for those that support picture effects and panoramic shooting.

SD/SDHC

	Capacity	Speed	Comments
DELKIN eFilm	128MB-2GB	n/a	Standard speed SD card
DELKIN eFilmPRO	256MB-2GB	n/a	High-speed SD card
DELKIN eFilm HC PRO	4GB	Class 4 (150x)	SDHC
FUJI SD	256MB-2GB	n/a	
FUJI 60x	256MB-2GB	60x	
FUJI 60x	1GB-2GB	133x	High-speed SD card
KINGSTON TECH SD	512MB-2GB	n/a	Cheap SD
KINGSTON TECH ElitePro	512MB-2GB	50x	
KINGSTON TECH Ultimate	2GB	120x	High-speed SD card
KINGSTON TECH SDHC	4GB-8GB	Class 2, 4, 6	
KINGSTON TECH Micro/Mini SD to SD	512MB-2GB	n/a	Dual adaptor for micro and mini SD compatibility
LEXAR SD	256MB-2GB	n/a	
LEXAR Platinum II	256MB-2GB	60x	
LEXAR Professional	1GB-2GB	133x	
LEXAR SDHC	4GB	Class 2	SDHC / Includes image-rescue software
LEXAR SDHC Platinum II	4GB	60x	SDHC
LEXAR SDHC Professional	4GB	133x	SDHC
PANASONIC SD	512MB-1GB	Class 2	
PANASONIC SD	2GB	Class 4	
PANASONIC Pro High Speed	512MB	20MB/sec	
PANASONIC Pro High Speed	1GB-2GB	Class 6	High-speed SD card
PANASONIC SDHC	4GB	Class 4	SDHC
SANDISK Shoot & Store SD	64MB-256MB	n/a	
SANDISK Standard SD	128MB-2GB	n/a	
SANDISK SDHC	4GB-8GB	Class 2	SDHC
SANDISK Ultra II Plus	512MB-2GB	66x	Built-in USB adaptor
SANDISK Extreme III	1GB-2GB	133x	High-speed SD card
SANDISK Extreme II SDHC	4GB	133x	Super-fast SDHC

CF

	Capacity	Speed	Comments
DELKIN eFilm	128MB-4GB	55x	
DELKIN eFilmPRO	256MB-8GB	n/a	High-capacity
FUJI CF	256MB-1GB	20x	
FUJI CF	256MB-4GB	40x	
FUJI CF	1GB-4GB	100x	High-capacity
FUJI CF	1GB-4GB	150x	High-speed/capacity
KINGSTON TECH Standard	256MB-2GB	n/a	
KINGSTON TECH ElitePro	512MB-2GB	50x	
KINGSTON TECH ElitePro	4GB-8GB	45x	
KINGSTON TECH Ultimate High Perf.	1GB	100x	High-speed
KINGSTON TECH Ultimate High Perf.	2GB-8GB	133x	High-speed/capacity
LEXAR CF	256MB-1GB	n/a	
LEXAR Platinum II	256MB-2GB	80x	
LEXAR Platinum II	4GB	60x	Includes image-rescue software
LEXAR Professional	1GB-4GB	80x	Includes image-rescue software
LEXAR Professional	1GB-8GB	133x	High-speed/capacity
LEXAR Lock Tight	512MB-2GB	n/a	'Locked' access for greater security
LEXAR Professional UDMA	2GB-8GB	300x	Lightning-fast, high-capacity card
SANDISK Standard CF	256MB-4GB	n/a	5 year warranty
SANDISK Ultra II	512MB-8GB	66x	High-capacity
SANDISK Extreme III	1GB-16GB	133x	High-speed/capacity
SANDISK Extreme IV	2GB-8GB	266x	Lightning fast and high-capacity
SONY Compact Vault	5GB	9MB write/2MB read	New Sony CF

Memory Sticks

	Capacity	Speed	Comments
DELKIN Memory Stick	64MB-128MB	n/a	
DELKIN Memory Stick Duo Pro	256MB-512MB	n/a	
LEXAR Memory Stick Duo with MagicGate	64MB-128MB	n/a	Standard card with Magicgate encryption
LEXAR Platinum II Pro	512MB-2GB	40x	Includes Corel Photo Album 6
LEXAR Platinum II Pro Duo	512MB-2GB	40x	Includes Corel Photo Album 6
SANDISK Pro	256MB-4GB	n/a	Standard Memory Stick Pro
SANDISK Pro Duo	256MB-4GB	n/a	
SANDISK Ultra II Pro Duo	512MB-4GB	66x	Low power consumption
SANDISK Extreme III	1GB-4GB	120x	Includes image-rescue software
SANDISK Extreme III Pro Duo	1GB-4GB	120x	High-speed
SONY Duo	128MB	n/a	
SONY Duo Pro	512MB-8GB	n/a	High-capacity
SONY Duo Pro High Speed	1GB-2GB	n/a	High-speed

xD Card

	Capacity	Speed	Comments
DELKIN eFilm	256MB-1GB	n/a	Standard speed card
FUJI Type H	256MB-2GB	33x	Fast xD card
FUJI Type M	256MB-2GB	n/a	
OLYMPUS Type H	256MB-1GB	9MB write/19MB read	2-3x faster than type M, panoramic support
OLYMPUS Type M	256MB-2GB	2.5MB write/4MB read	

PARK CAMERAS
Pro Dealers for over 35 Years
Visit www.Park Cameras.com/wdc for LOW Prices & Superb Service

Everything you need to know to help you make the right choice

What Printer & Scanner

Decisions, decisions. Choosing a photo printer is no easy task with so many options to consider. Here's a run-down...

There are currently two main technologies in common use. By far the most popular are inkjets (known by Canon as Bubblejets). These use various methods (such as heat or a piezo crystal) to fire microscopically small dots of ink through fine nozzles onto the paper, at incredible speed. Dye-Sublimation printers (known as dye-sub or dye transfer), on the other hand, work by heating a sheet of dye-coated acetate and transferring some of it to the paper. The paper has to be passed several times through the printer as each colour layer (cyan, magenta and yellow) is laid down separately from consecutive donor sheets, and a protective coating applied at the end.

BUYING ADVICE: CHOOSING A PRINTER OR SCANNER

DPI OR PPI: Printers use dots per inch and scanners scan in pixels per inch, but the term dpi is often used for both. Always judge your purchase via the actual dpi/ppi resolution rather than the higher, artificial 'optimised' figure.

PRICE PER PRINT: It's hard to judge an inkjet print's cost – portraits use more magenta ink, landscapes use more cyan. Dye-subs are more easily estimated, as a ribbon/paper combination is sold at a fixed price. Some inkjet manufacturers are starting to do this too.

PAPER MATTERS: Just as we advise you to buy manufacturer's own, or high-quality third-party inks, it's also worth investing in good quality papers. Apart from the manufacturers' own, there are several fine art brands, which WDC regularly reviews.

A few of the best printers and scanners

This Month's Picks

EPSON R800

Why we love this A4 desktop printer...
The R800 uses Epson's Ultra-Chrome Hi Gloss inks, with a 7-colour line-up including red, blue and two blacks to maximise the range of colours it can reproduce. A further tank of 'gloss optimiser' ensures a beautiful sheen.

EPSON PICTURE MATE 100

Why we love this compact printer...
The PictureMate 100 has been out a while but it's still a cracker nevertheless. It doesn't have the large LCD of the 500, but prints are sharp, with great colour, and its price makes it one of the best-value choices of its kind.

HP PRO B9180

Why we love this A3 desktop printer...
Built like a tank, the Photosmart Pro B9180 prints from 15x10cm up to A3 and the print quality is outstanding. While it may not the be the cheapest A3 printer on the market, it's the best that we've tested so far.

CANON 8400F

Why we love this flatbed scanner...
It's been around for a while but still offers great versatility and good-quality scans from both prints and film originals.

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

Which best suits your photographic requirements: a compact or desktop printer, or perhaps a multifunctional?

Compact Printer ➜

With a choice of inkjet or dye-sub models, these printers produce 6x4" enprints. They easily connect directly to cameras or mobile phones, either by USB, Bluetooth, Infrared or even WiFi to allow immediate prints. Most also accept media cards and may have LCD screens for image browsing. Some have batteries allowing more portability. Cost per print can be high but that's the price of convenience.

← A4 Inkjet Printer

The most common desktop printers allow prints to A4 or smaller paper. Modern inkjets offer high quality and speedy printing, matching that of conventional photographic prints. Recent ink and paper advances have also dramatically improved the life-span of inkjet prints, which can now outlast colour silver halide prints. Look for models with card slots and direct USB connection for maximum usability.

A3 Inkjet Printer ➜

While some A3 printers merely up the maximum paper size, others offer more advanced features, particularly for professional and high-end enthusiasts. Some models from Epson and HP offer exceptional print longevity, and the inclusion of grey inks make these popular for black and white fine-art photographs. While they are expensive to run, the results can be outstanding.

← Multifunctional

Also known as 'All-in-one' devices, these machines free up your deskspace by providing printing, scanning, copying and even fax facilities in one unit. Quality is rising and prices dropping in this sector, but individual devices still provide the maximum quality scans and prints – for now. However, multi-functionals are great all-rounders, especially if your budget or desk space is limited.

Scanner ➜

The ubiquity of digital cameras means scanners are not as popular as they were in the past, but if you want to input prints and negatives onto your PC, then one is essential. Many flatbed scanners have adaptors for scanning sides or negs as well as prints, but for maximum quality from film originals consider a dedicated film scanner – especially if you have a lifetime's amount of film to scan.

What Digital Camera Need to Know

Dazed and confused? Our guide to all the techno-babble will ease your pain...

MAXIMUM PRINT SIZE

When buying a printer consider the maximum print size you'll need. The standard desktop printer prints up to A4 (around 8x12") but can also print smaller sizes. For serious enthusiasts and big print lovers, an A3 printer makes more sense. Although they're bigger, and more expensive to buy and run, the A3 / 16x12" prints they can make look very impressive. If that isn't big enough there are larger printers stlll, at correspondingly higher prices. However, one of the biggest growth areas recently is in 6x4" printers. Although they can only do enprints, they're small and portable (some even offer a battery pack option for use 'in the field') and ideal for rattling off a quick print from your photos.

INK CARTRIDGES

Budget and non-photo printers tend to contain cartridges with just the four standard colours (cyan, magenta, yellow and black – CMYK). In some cases the three colours are contained in a single cartridge so that when, say, the yellow runs out, you have to replace it even though you may have loads of cyan left. Single ink cartridges solve this problem, but at a slightly higher cost for a full set (though they can work out cheaper in the long run). For true photo-realistic colour however, four colours isn't enough to capture the subtle hues of real life, so manufacturers add intermediate colours such as light magenta, or photo cyan. More advanced printers may have six or eight separate tanks.

INK TYPE

Most printer inks are made from dye. They can produce stunning results but until recently there were serious questions over their archival longevity, with reports of prints fading in just months. Manufacturers have worked hard to improve on this, with some success, but even the best dyes cannot compete with pigment-based inks when it comes to colour-fastness. Pigment inks are more expensive but don't fade as quickly. The disadvantage is their more matte finish, which is less easily absorbed into glossy papers and can diminish their sheen. The latest top-of-the-range inks (eg Epson's Ultrachrome ink) are a combination of dye and pigment to offer the best of both worlds. Incidentally, for quality, reliability and longevity reasons, we don't advise the use of cheap third-party inks (though the more expensive specialised inks are okay).

CONNECTIVITY

Once, if you wanted to use a printer, you needed to first switch on your PC and control it through that. Then manufacturers hit on the idea of adding slots for camera media cards, so you take the card out of the camera, pop it into the printer and get a print without going near a PC. Then PictBridge was invented, which allows you to transfer images from your camera to your printer via a USB cable, and control the printer from the back of the camera. Most printers offer PictBridge now, and many also have card slots. Some of the newest printers now offer Bluetooth for the wireless transfer of images. All printers can, of course, still be connected to a PC too.

DYE SUBLIMATION

An alternative to inkjet – which places drops of ink onto paper – is dye-sub. This uses ribbons with thermal dyes placed onto specially coated paper. The results can vary depending on manufacturer, but they often look much more like traditional photo prints. Most commonly used by compact printers, but there are also some A4 models from Kodak and Olympus, among others.

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS
Pro Dealers for over 35 Years

Compact Printers

			Type	Resolution	Inks	Borderless	Comments	Scores	
	Lexmark P350	£40 Street price	Inkjet	6x4" 4800 x1200 DPI	3 colour CMY	Yes	*Card Slots PictBridge 2.4" LCD USB 2.0 Hi-Speed*	87% What Digital Camera	TESTED DEC 06
	Lexmark P450	£50 Street price	Inkjet	6x4" 4800 x1200 DPI	3 colour CMY	Yes	*Card Slots PictBridge 2.4" LCD USB 2.0 Hi-Speed*	88% What Digital Camera	TESTED JAN 06
	Epson Picture-Mate 100	£60 Street price	Inkjet	6x4" 5760 x1440 DPI	4 colour CMYK	Yes	*Card Slots PictBridge 1.5" LCD*	89% What Digital Camera	TESTED DEC 05
	Sony DPP-FP35	£60 Street price	Dye-sub	6x4" 300 DPI	3 colour CMY	Yes	*PictBridge*		NOT YET TESTED
	Agfa Photo AP1100	£75 Street price	Dye-sub	6x4" 300 DPI	3 colour CMY	Yes	*Wi-fi, bluetooth and infrared compatible*		NOT YET TESTED
	HP Photo-smart A618	£75 Street price	Inkjet	6x8" 5x7" 4x12" 4800 DPI	3 colour CMY+ Vivera	Yes	*Card Slots PictBridge 2.5" LCD USB 2.0*	86% What Digital Camera	TESTED TESTS 06
	Canon SELPHY CP740	£75 Street price	Dye-sub	6x8" 300 DPI	3 colour CMY+ over coating	Yes	*Card Slots PictBridge Integrated USB cable 1.5" LCD*		NOT YET TESTED
	Canon Pixma Mini 260	£90 Street price	Inkjet	6x4" 9600 x2400 DPI	4 colour CMYK	Yes	*Card Slots PictBridge USB 2.0 Hi-Speed 2.5" LCD*		NOT YET TESTED
	Canon Selphy DS 810	£95 Street price	Inkjet	6x4" 4800 x 1200 DPI	4 colour CMYK	Yes	*Card Slots PictBridge 2.5" LCD USB*	84%	TESTED JAN 06
	Sony DPP-FP55	£100 Street price	Dye-sub	6x4" 300 DPI	3 colour CMY	Yes	*SD/MS Card slots PictBridge 2.0" LCD*	82%	TESTED NOV 06
	Epson Picture-Mate 500	£100 Street price	Inkjet	6x4" 5760 x1440 DPI	6 colour CMYK + Light Cyan Light Mag.	Yes	*Card Slots PictBridge 2.4" LCD*	91% What Digital Camera GOLD AWARD	TESTED DEC 06
	Epson Picture-Mate 240	£100 Street price	Inkjet	6x4" 5760 x1440 DPI	4 colour CMYK	Yes	*Card Slots PictBridge 2.5" LCD*	85% What Digital Camera	TESTED JAN 07
	Kodak Easy-Share 500	£100 Street price	Dye-sub	6x8" 300 DPI	3 colour CMY	Yes	*Card Slots PictBridge 3.5" LCD BlueTooth*		NOT YET TESTED
	HP Photo-smart A710	£100 Street price	Inkjet	6x4" 4800 x1200 DPI	3 colour CMY	Yes	*Card Slots PictBridge 2.5" LCD USB 2.0 4Gb memory*		NOT YET TESTED
	HP Photo-smart A612	£105 Street price	Inkjet	6x4" 4800 x1200 DPI	3 colour CMY	Yes	*Card Slots PictBridge 2.4" LCD USB 2.0*		NOT YET TESTED
	Agfa Photo AP2700	£120 Street price	Dye-sub	6x4 300 DPI	3 colour CMY	Yes	*Multi-format card reader PictBridge 2.4" LCD*		NOT YET TESTED
	Canon SELPHY CP750	£120 Street price	Inkjet	6x8" 4800 x1200 DPI	3 colour CMY	Yes	*Card Slots PictBridge USB 2.0 2.5" LCD*		NOT YET TESTED
	Sagem Photo Easy 260	£130 Street price	Dye-sub	6x8" 300 DPI	3 colour CMY	Yes	*Windows PC only PictBridge Infra Red*	83%	TESTED JUL 07
	Canon Selphy ES1	£135 Street price	Dye-sub	6x8" 300 x600 DPI	3 colour CMY+ over coating	Yes	*Card Slots PictBridge Integrated USB cable 2.5" LCD*		NOT YET TESTED
	Epson Picture-Mate 280	£180 Street price	Inkjet	6x4" 5760 x1440 DPI	4 colour CMYK	Yes	*Card Slots PictBridge 2.5" LCD Built-in CD-RW/CD-R*		NOT YET TESTED

A4 Desktop Printers

			Type	Resolution	Inks	Borderless	Comments	Scores	
	Canon iP1800	£40 Street price	Inkjet	A4 4800 x1200 DPI	4 colour CMYK Chroma Life 100 Pigment K	Yes	*PictBridge USB2.0*	83%	TESTED JULY 07
	Epson D92	£40 Street price	Inkjet	A4 5760 x1440	4 colour CMYK DuraBrite Ultra Ink	Yes	*PictBridge USB2.0*		NOT YET TESTED
	Canon iP2500	£45 Street price	Inkjet	A4 4800 x1200 DPI	4 colour CMYK Chroma Life 100 Pigment K	Yes	*PictBridge USB2.0 Hi-speed*		NOT YET TESTED
	Lexmark Z845	£50 Street price	Inkjet	A4 4800 x1200 DPI	4 colour CMYK 2 ink tanks	Yes	*Optional 6 colour printing USB 2.0 PictBridge*		NOT YET TESTED
	Epson Stylus Photo R265	£65 Street price	Inkjet	A4 5760 x1440 DPI	6 colour CMYK dye, light CM Single ink tanks	Yes	*PictBridge Print to CD/DVD Claria ink*	82%	TESTED JULY 07
	Canon iP4300	£65 Street price	Inkjet	A4 9600 x2400 DPI	5 colour CMYK dye Pigment K Single ink tanks	Yes	*PictBridge USB 2.0 Hi-speed*		NOT YET TESTED
	Epson Stylus Photo R220	£70 Street price	Inkjet	A4 5760 x1440 DPI	6 colour CMYK dye, light CM Single ink tanks	Yes	*Print onto CD/DVD PictBridge*		NOT YET TESTED
	Epson Stylus Photo R240	£70 Street price	Inkjet	A4 5760 x1440 DPI	4 colour CMYK dye Single ink tanks	Yes	*PictBridge USB2.0 Card slots*	87% What Digital Camera	TESTED FEB 06
	HP D5160	£75 Street price	Inkjet	A4 4800 x1200 DPI	6 colour Dye CMYK Light CM 3 ink tanks	Yes	*PictBridge Card slots USB2.0*		NOT YET TESTED
	Lexmark P915	£80 Street price	Inkjet	A4 4800 x 1200 DPI	4 colour CMYK	Yes	*PictBridge Card Slots 2.5" LCD USB 2.0*	83%	TESTED FEB 06
	Epson Stylus R360	£85 Street price	Inkjet	A4 5760 x1440 DPI	6 colour CMYK dye, light CM Single ink tanks	Yes	*PictBridge Card slots 3.5in LCD Print to CD/DVD Claria ink*	88% What Digital Camera	TESTED JULY 07
	Canon iP5300	£95 Street price	Inkjet	A4 9600 x2400 DPI	5 colour CMYK dye Pigment K Single ink tanks	Yes	*PictBridge USB 2.0 Hi-speed*	91% What Digital Camera GOLD AWARD	TESTED JULY 07
	HP D7160	£100 Street price	Inkjet	A4 4800 x1200 DPI	6 colour Dye CMYK Light CM Single ink tanks	Yes	*PictBridge Card slots USB 2.0*		NOT YET TESTED
	HP D7360	£120 Street price	Inkjet	A4 4800 x1200 DPI	6 colour Dye CMYK Light CM Single ink tanks	Yes	*PictBridge Card slots USB 2.0*	86% What Digital Camera	TESTED JULY 07
	Epson Stylus Photo R340	£120 Street price	Inkjet	A4 5760 x1440 DPI	6 colour CMYK dye, light CM Single ink tanks	Yes	*PictBridge Card slots 2.4in LCD Print to CD/DVD*		NOT YET TESTED
	Canon iP6700D	£120 Street price	Inkjet	A4 9600 x2400 DPI	6 colour CMYK dye, pale CM Single ink tanks	Yes	*PictBridge Card slots 3.5in LCD USB 2.0 Hi-speed*		NOT YET TESTED
	Canon iP90V	£180 Street price	Inkjet	A4 4800 x1200 DPI	4 colour CMYK Pigment K Chroma Life 100	Yes	*PictBridge IRDA Optional: Bluetooth Battery pack USB 2.0*		NOT YET TESTED
	Epson Stylus R800	£215 Street price	Inkjet	A4 5760 x1440 DPI	8 colour CMYKRRB + Gloss optimiser	Yes	*PictBridge UltraChrome Hi Gloss ink Photo & matt black inks*	88% What Digital Camera	TESTED MAR 05
	Olympus P-440	£330 Street price	Dye-sub	A4 314 DPI	3 colour CMY + overcoat	No	*xD card slot 1.8in LCD USB 1.1*	87% What Digital Camera	TESTED FEB 04
	Kodak 1400	£360 Street price	Dye-sub	A4 301 DPI	3 colour CMY + overcoat	No	*Gloss or matt overcoat depending on ribbon used*	89% What Digital Camera	TESTED NOV 05

PARK CAMERAS Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

A3 Desktop Printers

			TYPE	RESOLUTION	INKS	BORDERLESS	COMMENTS	SCORES	
	Canon iX4000	£200 Street price	Inkjet	A3+ 4800 x1200 DPI	4 colour Dye CMYK Single ink tanks	Yes	PictBridge USB 2.0 Hi-speed	81%	TESTED JULY 06
	Canon iX5000	£250 Street price	Inkjet	A3+ 4800 x1200 DPI	4 colour Dye CMYK Single ink tanks	Yes	PictBridge USB 2.0 Hi-speed		NOT YET TESTED
NEW	Epson Stylus Photo 1400	£270 Street price	Inkjet	A3+ 5760 x1440 DPI	6 colour Dye CMYK Light CM Single ink tanks	Yes	Print to CD / DVD ClariaInk USB 2.0 Hi-speed	90% What Digital Camera GOLD AWARD	TESTED APR 07
	Epson Stylus Photo R880	£340 Street price	Inkjet	A3+ 5760 x1440 DPI	8 colour CMYKRBK + gloss optimiser	Yes	UltraChrome Hi-Gloss Ink USB 2.0 Hi-speed / Firewire	89% What Digital Camera RECOMMENDED	TESTED OCT 05
	Canon Pro 9000	£400 Street price	Inkjet	A3+ 4800 x2400 DPI	8 colour Dye CMYKRG pale CM, Single ink tanks	Yes	PictBridge USB 2.0 Hi-speed	88% What Digital Camera RECOMMENDED	TESTED MAR 07
	HP B9180	£430 Street price	Inkjet	A3+ 4800 x1200 DPI	8 colour Pigment Inc. 3x grey inks	Yes	Vivera ink	93% What Digital Camera GOLD AWARD	TESTED MAY 06
	Epson Stylus Photo R2400	£450 Street price	Inkjet	A3+ 5760 x1440 DPI	8 colour CMYK Light CMK Light light K	Yes	UltraChrome K3 ink USB 2.0 Hi-speed / Firewire	90% What Digital Camera GOLD AWARD	TESTED OCT 05
	Canon Bubble Jet i9950	£475 Street price	Inkjet	A3+ 4800 x2400 DPI	8 colour Dye CMYKRG pale CM Single ink tanks	Yes	PictBridge USB 2.0 Hi-speed Firewire (Mac only)	87% What Digital Camera RECOMMENDED	TESTED OCT 05

Multi Functional

			PRINTER	RESOLUTION	SCANNER	FAX	COMMENTS	SCORES	
	Lexmark X4550	£100 Street price	Inkjet Four colour CMYK (Opt. 6 col)	A4 4800 x1200	A4 Flatbed 600x2400PI 19200x 19200PI (enhanced)	No	Card slots PictBridge	84% What Digital Camera RECOMMENDED	TESTED AUG 2007
	Epson Stylus RX520	£120 Street price	Inkjet Four colour CMYK	A4 5760 x1440 DPI	A4 Flatbed 35mm film 2400 x1200 DPI	No	Card slots 1.5in LCD Copier USB 2.0 Hi-speed	90% What Digital Camera GOLD AWARD	TESTED MAY 2006
	Epson Stylus RX560	£125 Street price	Inkjet Six colour CMYK Light CM	A4 5760 x1440 DPI	A4 Flatbed 35mm film 2400 x1200 DPI	No	Card slots 2.5in LCD Copier USB 2.0 Hi-speed	88% What Digital Camera RECOMMENDED	TESTED AUG 2007
	HP C5180	£130 Street price	Inkjet Six colour CMYK Light CM	A4 4800 x1200 DPI	A4 Flatbed 4800 x2400 DPI	No	Card slots 2.4in LCD Copier	87% What Digital Camera RECOMMENDED	TESTED DEC 2006
	Kodak 5300	£140 Street price	Inkjet Six colour CMYK Pht Bl	A4 5760 x1440 DPI	A4 Flatbed tbc	No	PictBridge, 2 cartridge system	89% What Digital Camera RECOMMENDED	TESTED AUG 2007
	Canon Pixma MP600	£150 Street price	Inkjet Five colour CMY 2K	A4 9600 x2400 DPI	A4 Flatbed 2400 x4800 DPI	No	Card slots 2.5in LCD Copier USB 2.0 Hi-speed	91% What Digital Camera GOLD AWARD	TESTED AUG 2007
	Canon Pixma MP530	£165 Street price	Inkjet Four colour CMYK	A4 4800 x1200 DPI	A4 Flatbed 2400 x1200 DPI	Yes	Card slots Copier, Fax USB 2.0 Hi-speed	82%	TESTED AUG 2006
	Epson Stylus RX640	£180 Street price	Inkjet Six colour CMYK Light CM	A4 5760 x1440 DPI	A4 Flatbed 35mm film 6400 x3200 DPI	No	Card slots 2.5in LCD Copier USB 2.0 Hi-speed		NOT YET TESTED
	Canon Pixma MP810	£190 Street price	Inkjet Five colour CMY 2K	A4 9600 x2400 DPI	A4 Flatbed 35mm film 4800 x9600 DPI	No	Card slots 3.0in LCD Copier USB 2.0 Hi-speed		NOT YET TESTED

Scanners

			TYPE	RESOLUTION	TRANSPARENCY	DMax	OTHER	SCORES	
	Canon LiDE 70	£60 Street price	Flat-bed	2400 x4800 ppi	No	-	8 bit USB 2.0 Hi-speed		NOT YET TESTED
	HP Scanjet 3800	£60 Street price	Flat-bed	2400 x4800 ppi	35mm	-	16/8 bit USB 2.0 Hi-speed		NOT YET TESTED
	Epson V100	£65 Street price	Flat-bed	3200 x6400 ppi	35mm	3.20	16/8 bit USB 2.0 Hi-speed		NOT YET TESTED
	HP Scanjet G3010	£75 Street price	Flat-bed	4800 x9600 ppi	35mm	3.20	48 bit USB 2.0 Hi-speed		NOT YET TESTED
	Canon LiDE 600F	£90 Street price	Flat-bed	4800 x9600 ppi	35mm	-	16/8 bit FARE level 3 USB 2.0 Hi-speed		NOT YET TESTED
	Epson V350	£95 Street price	Flat-bed	4800 x9600 ppi	35mm	3.20	16/8 bit USB 2.0 Hi-speed		NOT YET TESTED
	HP Scanjet G4010	£120 Street price	Flat-bed	4800 x9600 ppi	35mm	-	48 bit USB 2.0 Hi-speed		NOT YET TESTED
	Canon 8600F	£130 Street price	Flat-bed	4800 x9600 ppi	35mm 120	-	16/8 bit USB 2.0 Hi-speed		NOT YET TESTED
	Canon 8400F	£120 Street price	Flat-bed	3200 x6400 ppi	35mm 120	3.30	16/8 bit FARE level 3 USB 2.0 Hi-speed	91% What Digital Camera GOLD AWARD	TESTED APR 05
	Epson 4490	£130 Street price	Flat-bed	4800 x9600 ppi	35mm 120	3.40	16/8 bit Digital ICE USB 2.0 Hi-speed	91% What Digital Camera GOLD AWARD	TESTED MAY 06
	HP Scanjet 4890	£170 Street price	Flat-bed	4800 x9600 ppi	35mm 120 5x4"	-	16/8 bit USB 2.0 Hi-speed	81%	TESTED MAR 06
	HP Scanjet G4050	£190 Street price	Flat-bed	4800 x9600 ppi	35mm 120 5x4"	-	48 bit Dust & scratch removal USB 2.0 Hi-speed		NOT YET TESTED
	Plustek OpticFilm 7200i	£230 Street price	Film	7200 ppi	35mm	3.30	16/8 bit Infrared dust & scratch removal USB 2.0 Hi-speed		NOT YET TESTED
	Epson 4990	£260 Street price	Flat-bed	4800 x9600 ppi	35mm 120 5x4" 10x8"	4.00	16/8 bit Digital ICE USB 2.0 Hi-speed	90% What Digital Camera GOLD AWARD	TESTED MAY 05
	Epson V700	£350 Street price	Flat-bed	6400 x9600 ppi	35mm 120 5x4" 10x8"	4.00	16/8 bit Digital ICE USB 2.0 Hi-speed Firewire	92% What Digital Camera GOLD AWARD	TESTED MAY 06
	Canon 9950F	£370 Street price	Flat-bed	4800 x9600 ppi	35mm 120 5x4" 10x8"	3.80	16/8 bit FARE level 3 USB 2.0 Hi-speed Firewire		NOT YET TESTED
	Nikon Coolscan V	£460 Street price	Film	4000 ppi	35mm	4.20	16/8 bit Digital ICE USB 2.0		NOT YET TESTED
	Epson V750	£480 Street price	Flat-bed	6400 x9600 ppi	35mm 120 5x4" 10x8"	4.00	16/8 bit Digital ICE USB 2.0 Hi-speed Firewire Fluid mount	92% What Digital Camera GOLD AWARD	TESTED AUG 06
	Nikon Coolscan 5000	£800 Street price	Film	4000 ppi	35mm	4.80	16/8 bit Digital ICE USB 2.0		NOT YET TESTED
	Nikon Coolscan 9000	£2000 Street price	Film	4000 ppi	35mm 120	4.80	16/8 bit Digital ICE Firewire		NOT YET TESTED

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS
Pro Dealers for over 35 Years

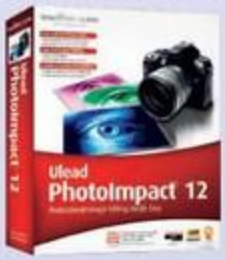
The best applications to sort, edit and enhance your images

What Software

For a lot of people, digital photography means just taking their memory card to a high-street lab and getting prints made. For others, it means storing images on the computer, making montages, or building web galleries.

There's a bewildering variety of software available to facilitate everyone's needs and budget – from simple, automated fixes to powerful image-editing suites.

Imaging software tends to fall into several categories. The most well-known is image enhancement and manipulation software, such as the ubiquitous Adobe Photoshop. Then there's the plethora of organising, viewing and image-management software. These categories are beginning to merge with the latest-generation apps such as Photoshop Elements 5 and Corel PaintShop Pro Photo XI, which perform both functions. Raw processing software, designed specifically for working with Raw image files, is a growing sector. And then of course there are the many specialist applications and Photoshop plug-ins that do specific things such as create panoramas, sharpen your pictures or enlarge them beyond their natural size.



WDC regularly tests the most popular, the most useful and even some of the more unusual software designed to help you get the best from your images. And some of it is even free!

BUYING ADVICE: CHOOSING SOFTWARE

What to look for

Download or CD? Many smaller applications can only be downloaded from the web, but for bigger applications this can be time consuming if you don't have a fast broadband connection. A CD version also ensures you have a back-up copy should you suffer any PC problems. Make a back-up CD of any software you download, to be on the safe side.

Judge your needs While we love Adobe Photoshop at WDC, it's a complicated program and unnecessary if you just want to view your pictures and fix the occasional redeye problem.

System requirements Check you're buying software that's compatible with your system – Mac software won't work on a PC and some programs require powerful processors, graphic cards or RAM capacity.

Keep up to date Check for software updates – bug-fixes, security updates or even new technology is often added to software on an ongoing basis. These should be free from the developer's website, though new full versions of software usually have to be paid for, either for a reduced rate upgrade price or for full price.

Check the dollar signs Many downloads come from the US, so be aware of the exchange rate; you may save money by buying when the pound is stronger.

			TYPE	PLATFORM	SUMMARY	SCORES	
	Adobe Photoshop Album SE www.pixmantec.com	FREE	Organising software	Win	This starter edition is easy to use and the photo-sharing functions are well worth a look	76%	TESTED FEB 2007
	Corel Snapfire LJ www.corel.com	FREE	Organising software	Win	A fun, well thought out program. Digital newbies will like Snapfire's friendly look and easy to use dialogues	80%	TESTED FEB 2007
	GIMP 5 www.gimp.org	FREE	Image editing suite	Win/ Mac/ Unix	Very powerful photo-editing tools with support for layers, channels etc. Good expandability	87% What Digital Camera	TESTED FEB 2007
	Google Picasa 2 www.google.com	FREE	Organising software	Win	Easy to use with powerful search tools, this brings the power of Google to your pictures folder	85% What Digital Camera	TESTED FEB 2007
	IrfanView 4 www.irfanview.com	FREE	Image editing suite	Win	For those wanting to explore the potential of freeware Photoshop filters without having Photoshop	78%	TESTED FEB 2007
	Kodak Easyshare 6.3 www.kodak.com	FREE	Organising software		Most compact users will find all the tools they need plus advanced browsing features	78%	TESTED SEP 2006
	PosteRazor http://posterazor.sourceforge.net	FREE	Printing enlargement software	Win/ Mac	'Image-tiling' software enabling you to make big prints without a big printer	88% What Digital Camera	TESTED MAY 2007
	Restoration 2.5 www.snapfiles.com	FREE	Image recovery software	Win	Image recovery software for accidentally deleted files		NOT TESTED
	ToneUp Studio www.toneupstudio.com	£8	Rawconverted Nikon custom curves	Win	An inexpensive alternative to Nikon Capture with the added capability to upload custom curves to your Nikon	85% What Digital Camera	TESTED JUN 2006
	Tesco PhotoRestyle www.tesco.com	£10	Image editing suite	Win	Basic editing tools and no Raw support but fantastic value for money	91% What Digital Camera GOLD AWARD	TESTED FEB 2007
	Andy B/W Pro www.nesl.com	£10	Bibble plug-in	Win/ Mac	A great Bibble plug-in that simulates conventional B/W film and paper combinations.	85% What Digital Camera	TESTED OCT 2006
	Software Imaging Inksaver www.inksaver.com	£17.50	Printing software	Win	A useful program that will save you money and has virtually no effect on print quality under normal use	89% What Digital Camera	TESTED APR 2005
	StudioLine Photo Classic 3 www.studioline.net	£20	Image editing suite	Win	Impressive functionality and more intuitive than older versions, this has most of the tools a hobbyist needs	81%	TESTED JAN 2006
	Carbonite PC Backup www.carbonite.com	£25	Online-backup software	Win	Simple and cost-effective way of backing up your documents	87% What Digital Camera	TESTED JAN 2007
	Ulead CD & DVD Picture Show 4 www.ulead.co.uk	£30	Slideshow/ disc creation	Win	Easy to use but basic slideshow and disc burning tool	85% What Digital Camera	TESTED DEC 2005
	Roxio Photo Suite 8 www.roxio.com	£30	Organising and editing Suite	Win	Useful tools and some unique features make this budget editor worth a look		NOT TESTED
	Ulead Photo Impact 12 www.ulead.co.uk	£30	Slideshow and disc creation	Win	A cheaper rival to Photoshop (score based on previous version)	88% What Digital Camera	TESTED FEB 2005
	FixerLabs FixerBundle www.fixerlabs.com	£30	Image Optimisation plug-ins	Win/ Mac	FocusFixer and Noise-Fixer work very well and all the tools are intuitive to use.	83%	TESTED MAY 2007
	Iridius Pro Actions LJ www.iridius.co.uk	£34	Photoshop actions suite	Win/ Mac	For the busy photographer, the Iridius Action set is a fantastic, time-saving lifesaver	91% What Digital Camera GOLD AWARD	TESTED NOV 2004
	Bibble Lite 4.9.5 www.bibblelabs.com	£35	RAW converter	Win/ Mac	Plenty of features that allow silky looking images and it works with Adobe Bridge	91% What Digital Camera GOLD AWARD	TESTED JULY 2007
	BreezeBrowser Pro www.breezesys.com	£45	Raw converted image browser	Win	Good general purpose browser with Raw support, especially for Canon cameras	84%	TESTED OCT 2006
	DxO Optics Pro 4.5 www.dxo.com	£40 Basic	Image correction	Win/ Mac	Fantastic workflow and optical correction tool - try the download and prepare to be amazed	91% What Digital Camera GOLD AWARD	TESTED MAY 2007
	Silver Oxide Landscape www.silveroxide.com	£45	Photoshop plug-in	Win/ Mac	A pair of plug-ins to enhance colour and tonality in landscape pictures	80%	TESTED MAY 2005

PARK CAMERAS
Pro Dealers for over 35 Years
Visit www.ParkCameras.com/wdc where you'll find;

			TYPE	PLATFORM	SUMMARY	SCORES	
	Fixerlabs SizeFixer SLR www.fixerlabs.com	£50	Resizing software	Win/Mac	*Reasonably effective upscaling but slow compared to similar products*	69%	TESTED MAR 2005
	PixelGenius Photokit Sharpener www.pixelgenius.com	£55	Image sharpening	Win/Mac	*Image sharpening workflow tool, from capture to output*	91%	TESTED MAY 2004
	PixelGenius Photokit Color www.pixelgenius.com	£55	Photoshop colour tools/effects	Win/Mac	*Time-saving software capable of a wide variety of excellent results*	90%	TESTED MAY 2005
	Acdsee Pro Photo Manager www.acdsee.co.uk	£60	Basic editing software	Win	*Basic but easy to use and offers more control than most dedicated software packages*	80%	TESTED JULY 2007
	DxO FilmPack LI www.dxo.com	£60	Image editor	Win/Mac	*Fantastic software for replicating film-looks from digital images*	90%	TESTED JAN 2007
	iCorrect Edit Lab Pro 5.0 www.colourconfidence.com	£60	Colour correction	Win/Mac	*Powerful colour correction tools for the beginner or advanced photographer*	86%	TESTED APR 2006
	Magix Photo & Graphic Design www.magix.net	£60	Editing and graphics software	Win	*Easy to use image editing and graphics design software*		NOT YET TESTED
	Adobe PS Elements 5.0 www.adobe.com	£70	Image editing suite	Win/Mac (v4)	*Great features and all the good bits of Photoshop CS2 without the hefty cost*	90%	TESTED NOV 2006
	Photo Zoom Pro 2 www.softwot.com	£75	Resizing software	Win/Mac	*Superior alternative to Photoshop for high-quality enlargements*	84%	TESTED JAN 2007
	Real Viz Stitcher Express 2 www.dcpsystems.com	£80	Panorama creator	Win/Mac	*Simple interface and powerful stitching at a fair price. (Score based on previous version)*	88%	TESTED OCT 2005
	Corel Paint Shop Pro XI www.corel.co.uk	£90	Image editing suite	Win	*Not a major improvement over PSP X but still offers a lot of value for money*	89%	TESTED NOV 2006
	Genuine Fractals 5 www.dcpsystems.com	£105	Resizing plug-in	Win/Mac	*Good results for anyone who wants to make large prints from their digital photographs*	88%	TESTED SEP 2005
	AlienSkin Exposure www.alienskin.com	£100	Image editor/PS plug-in	Win/Mac	*Fun and useful software that mimics the unique characteristics of individual film stocks*	85%	TESTED APR 2006
	Extensis Portfolio 8 www.extensis.com	£100	Digital asset management	Win/Mac	*Powerful, fast and professional DAM system, but complicated for home use*	86%	TESTED MAR 2006
	Capture One LE 3.7.7 www.phaseone.com	£120	Raw workflow	Win/Mac	*Simplified version of Raw software Capture One (see below)*		NOT YET TESTED
	Nikon Capture NX www.nikon.co.uk	£120	Raw-converter/organiser	Win/Mac	*Nikon's premium Raw converter is one of the best tools for getting the best from your NEF files*	87%	TESTED OCT 2006
	iViewMedia Pro 3 www.iview-multimedia.com	£130	Digital asset management	Win/Mac	*Catalogues and organises a wide variety of formats quickly and effectively, with useful new features*	87%	TESTED FEB 2006
	Vertus Fluid Mask www.vertustech.com	£160	Cut out plug-in	Win/Mac	*Sophisticated tool makes cut-outs easy to perform*	88%	TESTED JAN 2006
	Adobe Lightroom 1.0 www.adobe.com	£205	Raw workflow and editing	Win/Mac	*Very cool workflow solution for non-destructive file management and editing*	90%	TESTED APR 2007
	Apple Aperture 1.5 www.apple.com	£150	Raw workflow and editing	Mac	*The latest update improves on v1.0, but not as fast as Lightroom and only for Mac users*	88%	TESTED JAN 2007
	Capture One www.phaseone.com	£250	Raw workflow	Win/Mac	*Well-respected and powerful Raw workflow tool. A cheaper LE version is also available*	89%	TESTED OCT 2006
	Corel Draw X3 www.corel.com	£350	Graphics editing suite	Win	*Full graphic suite includes the excellent Photo-Paint X3 software*	87%	TESTED APR 2006
	Adobe Photoshop CS3 www.adobe.com	£570	Image editing suite	Win/Mac	*The most comprehensive editing software on the market, building on the success of CS2*	90%	TESTED APR 2007

What Digital Camera Contacts

Check out these UK distributors' and manufacturers' websites for more info

CAMERAS
Acer www.acer.co.uk
enQ www.benq.co.uk
Canon www.canon.co.uk
Casio www.exilim.co.uk
Fujifilm www.fujifilm.co.uk
Kodak www.kodak.co.uk
Leica www.leica.co.uk
Nikon www.nikon.co.uk
Olympus www.olympus.co.uk
Panasonic www.panasonic.co.uk
Pentax www.pentax.co.uk
Ricoh www.ricoh-cameras.co.uk
Samsung www.samsungcamera.co.uk
Sigma www.sigma-imaging-uk.com
Sony www.sony.co.uk

LENSES
Canon www.canon.co.uk
Leica www.leica.co.uk
Lensbaby www.intro2020.co.uk
Nikon www.nikon.co.uk
Olympus www.olympus.co.uk
Pentax www.pentax.co.uk
Schneider www.schneideroptics.com
Sigma www.sigma-imaging-uk.com
Sony www.sony.co.uk
Tamron www.intro2020.co.uk
Tokina www.intro2020.co.uk
Zeiss www.zeiss.com/photo

FILTERS
B&W www.bwfilter.com
Cokin www.cokin.co.uk
Hitech www.formatt.co.uk
Hoya www.intro2020.co.uk
Lee www.leefilters.com
Sigma www.sigma-imaging-uk.com
Tiffen www.tiffen.com

FLASHGUNS
Canon www.canon.co.uk
Jessops www.jessops.com
Metz www.intro2020.co.uk
Nikon www.nikon.co.uk
Olympus www.olympus.co.uk
Panasonic www.panasonic.co.uk
Pentax www.pentax.co.uk
Sigma www.sigma-imaging-uk.com
Sony www.sony.co.uk
Sunpak www.intro2020.co.uk

PRINTERS
Canon www.canon.co.uk
Epson www.epson.co.uk
HP www.hp.co.uk
Kodak www.kodak.co.uk
Lexmark www.lexmark.co.uk
Olympus www.olympus.co.uk
Sagem www.sagem.co.uk
Sony www.sony.co.uk

INKJET PAPER
Fotospeed www.fotospeed.com
Ilford www.ilford.com
Innova www.innovaart.com
Kentmere www.kentmere.co.uk
Hahnemuhle www.hahnemuehle.com
Harman www.harman-inkjet.com
Olmec www.ici-imagedata.com
Permajet www.novadarkroom.com

SCANNERS
Canon www.canon.co.uk
Epson www.epson.co.uk
Microtek www.microtek.co.uk
HP www.hp.co.uk
Nikon www.nikon.co.uk
Plustek www.plustek.com/uk

DIGITAL STORAGE
Archos www.archos.com
Epson www.epson.co.uk
Innoplus www.innoplus.com
Jobo www.jobo.com
LaCie www.lacie.com/uk
Maxtor www.maxtor.com
Smartdisk www.smartdisk.com
Vosonic www.vosonic.com

MEDIA CARDS
Delkin www.delkin.com
Fujifilm www.fujifilm.com
Kingston www.kingston.com
Lexar www.lexar.com
PNY www.pny.com
Pretec www.pretec.com
Sandisk www.sandisk.co.uk
Sony www.sony.co.uk

TRIPODS AND HEADS
Bento www.petersonphotographic.com
Calumet www.calumetphoto.co.uk
Giottos www.giottos.co.uk
Gitzo www.gitzo.co.uk
Gorillapod www.intro2020.co.uk
Jessops www.jessops.com
Manfrotto www.manfrotto.co.uk
National Geographic no website
Slik www.intro2020.co.uk
Uni-Loc www.ukray.com/unniloc
Velbon www.intro2020.co.uk
Wimberley www.tripodhead.com

BAGS
Billingham www.billingham.co.uk
CCS www.fotolynx.co.uk
Crumpler www.intro2020.co.uk
Domke www.tiffen.com
Heritage www.heritage-bag.com
Jessops www.jessops.com
Kata www.kata-bag.com
Lowepro www.lowepro.com
National Geographic no website
Peli www.peli.com
Storm www.stormcase.com
Tamrac www.intro2020.co.uk
Tenba www.tenba.com

STUDIO/LIGHTING
Bowens www.bowens.co.uk
Elinchrom www.theflashcentre.com
Hedler www.theflashcentre.com
Interfit www.interfitphotographic.com
Kaiser www.kaiser-fototechnik.de/en
Lastolite www.lastolite.com

Dont forget:
Visit our website and check out all the latest digital camera and accessory news!

www.whatdigitalcamera.com

• LOW Prices • Superb Service • Extensive range of the largest brands
• Free Expert Advice • All UK Stock • Experienced, friendly staff
PARK CAMERAS
Pro Dealers for over 35 Years

The Last Word

A parting shot from the Editor

Is CMOS the future?

The news that Sony and Canon are investing billions of yen in the production of CMOS sensors, suggests we're at the cusp of a technological shift away from the CCDs in our digital cameras.

CMOS sensors have been shown to be faster and more energy efficient than CCDs, and at the moment, are more likely to be found in camera phones. But this wasn't always the case. CMOS sensors were once discredited as inferior to CCDs, which is why so few manufacturers pursued that route. Only Canon kept the faith and has so far been the only company to produce large CMOS sensors, which can be found in all of its DSLRs, but with this announcement comes news that the sensors will now be used in Canon's compacts.

Sony has until now exclusively used CCDs in its cameras but has added CMOS to HD video cameras. If Sony has switched its emphasis to CMOS surely it won't be long before most digital cameras cameras will be using these sensors, as Sony is also one of the world's major suppliers of sensors to other manufacturers.

It's probably only a matter of time before we see more DSLRs fitted with CMOS sensors, hopefully leading to faster frame rates, more pixels and, perhaps, a wider range of full frame DSLRs to compete with Canon.

> How long before we see a full-frame DSLR from Sony?

This last point is the most exciting. At the moment anyone wanting a DSLR with a full-frame (35mm sized) sensor has to buy a Canon EOS 5D or one of the 1D derivatives. If indeed there's a Sony full-frame CMOS sensor on its way, how long before we also see a full-frame DSLR from Sony (as is already rumoured) – not to mention Nikon, Pentax and Samsung.

Finding Inspiration

Paul Nuttall has found a new obsession...

I recently put some time aside to learn about a new technique that I had noticed by the name of HDR (or High Dynamic Range) processing.

The technique involves combining various exposures on an image to reveal dynamic data often lost in highlights and shadows. The resulting images are frequently eye-catching, often breathtaking and sometimes horrific (as I found to my dismay!), yet as soon as I completed my first successful-ish image, I was hooked.

Whilst trying to ascertain what makes a good HDR image, I found myself re-learning the key to what makes a good photo full stop. Subject, setting and composition still just as critical, if not more, as they are in contemporary photography, so I would like to think that my photography on the whole has improved.

The motto? Keep your photography fresh and original by trying out new techniques and ideas. Whereas you may not necessarily become an HDR-obsessive (like me) you might just find your overall photography improving.

The image below is my latest offering and demonstrates the capacity to correctly expose various elements of one image in a way impossible by any other methods. Keep an eye out next month for a feature on the technique behind HDR and tutorials on how to achieve the same results.

Above: HDR Photography involves combing various images to create images with a wider dynamic range

CONTRIBUTE TO What Digital Camera

Send us your pictures, letters and queries, and you could be in with a chance of winning a great prize

LETTERS

Want to get something off your chest? Share it with us at wdc@ipcmedia.com for publication in a forthcoming issue or write to us at the address above. The Letter of the Month will receive a goody bag of photo books worth at least £50.

PROBLEMS AND ADVICE

Got a problem? Need help? Then write to us with your query: wdchelpfile@ipcmedia.com or at the postal address (below). We try to answer all queries but cannot guarantee it, and answers may take a while to appear in print. Questions published in the magazine may also be posted on the website.

PICTURES

Send us your best pictures and see them in print! You could win a fabulous prize. The best images sent to us each month will be published in WDC or on our website gallery at: www.whatdigitalcamera.com.

My Digital Camera: If your portfolio is published in our gallery section you could win a Kata backpack worth £170 or a National Geographic backpack worth £120.

Evening Class: Our resident photo critic, Martin Evening, selects a handful of readers' images each month for constructive criticism in his Evening Class column. Every picture published wins a copy of Adobe Photoshop Elements 5.0.

SUBMITTING PHOTOS

BY EMAIL:

Email up to five JPEG images to: wdcgallery@ipcmedia.com
Images must conform to these specifications:

- Mimimum size 1800x1200 pixels. This equates to approx 6"x4" (15cmx10cm) at 300ppi, or a file size of around 6MB when OPEN. (Remember: jpegs are smaller when not open).
- Maximum size 3000x2000 pixels, which is around 10"x7" (25x17cm) at 300ppi – an OPEN file size of 17MB.
- Do not attach too many images to a single email. Try to keep total email sizes below 5MB. Send them on several emails if necessary.
- Make sure you also include the information listed below.

BY POST:

Send up to 20 JPEGs or TIFFs on a CD to the address above.

- Minimum sizes as above, but there's no maximum size limit.
- A printed sheet of thumbnails would be useful for reference.
- Make sure you also include the information listed below, as a text document on the CD.

PLEASE INCLUDE THE FOLLOWING INFORMATION:

- Your name
- Where you're from
- Around 20 words about yourself
- The title of the image
- Caption details (what, where, how etc)
- Camera and lens details
- Exposure information (if known)
- A mugshot of yourself